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ABSTRACT

This report includes expanded versions of two papers by Frances Kemmerer and Alan P. Wagner which were first presented at a 1983 working seminar on the recommendations of five national educational task forces and their implications for New York State educational policy. Included also is a major additional paper contributed by W. Paul Vogt. The task force reports discussed are those of the College Board, the Education Commission of the States' Task Force on Education and Economic Growth, the National Commission on Excellence in Education, the Paideia Group, and the Twentieth Century Fund. The first paper, "Change and Continuity in Educational Policy" (Vogt), presents an overview of the history of educational reform, with special attention to Federal and State issues, and assesses the strengths of various reform agents, including parents and local citizens; teachers and their organizations; school boards and local educational administrators; the Federal government; and State governments. The second paper, "The National Reports: Research and Recommendations" (Kemmerer), discusses the role of the State in education and considers the constraints and opportunities endemic to multilevel decision-making. Major task force recommendations are analyzed in the light of recent research, and necessary linkages among recommendations are noted. The third paper, "Financing Improvements in Educational Quality" (Wagner), assesses the costs of implementing a number of key recommendations in New York State and the nation as a whole. Also included in the document are the 1983 seminar agenda; a list of participants; an attachment containing cost estimates for an educational improvement plan in New York; an appendix containing statistics pertaining to teacher salaries, cost of education, pupil enrollment, and achievement, etc.; and a bibliography. (KH)

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The Nelson A. Rockefeller Institute of Government

Rockefeller Institute Special Report Series

Challenge From Without: Analysis of the Recommendations Advanced by Five National Education Task Forces and Their Policy Implications for Precollege and Higher Education

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CHALLENGE FROM WITHOUT: ANALYSIS OF THE RECOMMENDATIONS ADVANCED BY FIVE NATIONAL EDUCATION TASK FORCES AND THEIR POLICY IMPLICATIONS FOR PRECOLLEGE AND HIGHER EDUCATION

FRANCES KEMMERER,

ALAN P. WAGNER,

W. PAUL VOGT

Preface

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CHALLENGE FROM WITHOUT:
ANALYSIS OF THE RECOMMENDATIONS ADVANCED
BY FIVE NATIONAL EDUCATION TASK FORCES AND THEIR
POLICY IMPLICATIONS FOR PRECOLLEGE AND HIGHER EDUCATION

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PREFACE

In 1983 more than a dozen reports were issued by national commissions and study groups calling for specific reforms of elementary and secondary schools. Like the rash of educational reports that followed the launching of Sputnik in 1957, these documents have sought far-reaching reforms in teaching, curriculum, and educational accountability. These documents have caused a resurgence of interest in education among our political leaders and on the part of the American people. They have caused education policy to be both a national as well as a state issue.

The history of reform since the 1950's has produced optimistic promises, raised expectations, bold experiments, some success--and despair, failure, distrust, and neglect. The reform scene today is a kaleidoscopic confusion of contending interests, of different assessments of need, of rhetorical panaceas and complexity. Due largely to the national reports, however, it is also one of hope. The importance and dream of what education can make possible for children has once again rekindled the aspirations and imagination of the American people.

The attention education has received in the past 12 months has produced greater optimism about making real progress toward achieving educational excellence than many of us have felt in a very long time. There is about in the land genuine interest in improving teacher salaries, strengthening standards for graduation, making schools safer places for both students and staff, and providing high quality education for all Americans.

On September 7, 1983, a working seminar was convened by the School of Education, State University of New York at Albany, and the Nelson A. Rockefeller Institute of Government, State University of New York, to review five national commission reports and discuss their implications for education policy in New York State. The seminar was convened to raise the consciousness of education leaders and policy makers at all levels about both the policy opportunities and problems addressed by various national education commission reports. Attendees represented the continuum of education from kindergarten to the postgraduate level and from the executive branch of government to the state assembly and senate. The forum was titled, "The National Education Debate and New York State." A copy of the seminar agenda and guest list follow the preface.

Prior to the seminar each participant was provided with copies of five national commission reports (i.e. College Board; ECS Task Force; National Commission on Excellence in Education; Paideia Group; Twentieth Century Fund) as well as information about the Board of Regents of the State of New York Action Plan to Improve Elementary and Secondary Education. In addition, two papers which synthesized these documents were also made available to attendees. These documents, authored by Professors Frances Kemmerer and Alan P. Wagner, School of Education, State University of New York at Albany, reviewed the research related to the recommendations and prepared estimates of the cost of implementation.

The papers contained in this publication have been revised and expanded. Each paper is preceded by a summary. A major addition is the work of Professor Paul Vogt (School of Education, State University of New York at Albany). Vogt provides an overview of the history of education reform with

special attention to Federal and state issues. Collectively, the papers are intended to underscore the profound stake citizens of New York State have in improving the quality of education for all students.

The bibliography is intended to be reasonably comprehensive although not definitive. Selected summative information pertaining to the status of education in general and in New York in particular (e.g. teacher salaries, cost of education, pupil enrollment, pupil achievement, etc.) is included in an appendix. The tables provide the reader with comparative information the seminar participants felt it was essential to know in order to make informed judgments.

The information presented herein is not comprehensive, however, because of limited time and resources in planning and implementing the seminar. For example, since last fall several additional reports have been published (e.g. A Place Called School, High School, and Horace's Compromise), the Board of Regents has approved a revised Action Plan, and several states have proposed and approved education reform legislation (e.g. California, Florida, and Tennessee).

Since last fall the national debate on education reform has gone through several major phases. Educators, policymakers and legislators are now hard at work grappling with ways to translate well intended recommendations into programs. New York State is clearly in the forefront of efforts to develop a meaningful reform agenda. We wish to congratulate the Governor, the Legislature, and the Board of Regents for their efforts to deal with this difficult subject.

There is, however, a need for a continuing dialogue on education policy. Maintaining public interest and support for educational improvement and reform is essential. In addition, effort must continue to focus on long-range plans for improving the quality of education all students receive in New York State elementary and secondary schools as well as how best to strengthen partnerships between the-pre college sector (K-12), higher education and the corporate community.

The year 1984 will be a year of re-evaluation and improvement for education. What is needed now is thoughtful action; action that will generate for all students equal educational opportunity. Excellence must be striven for by all students, regardless of their race, sex, social class or ability level. Further, the focus of our efforts must be on the teacher, the individual classroom and the local school.

Finally, the School of Education and the authors wish to express their grateful appreciation for the support provided by the Nelson A. Rockefeller Institute of Government. Without the generous assistance of the Institute Director, Warren Ilchman, the seminar would not have been held and the proceedings could not have been published.

Robert H. Koff, Dean
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March 1984

WORKING SEMINAR
THE NATIONAL EDUCATION DEBATE AND NEW YORK STATE
September 7, 1983

AGENDA

9:30 A.M. - Greetings

Dr. Clifton R. Wharton, Jr.
Chancellor, State University of New York, and
Chairman, Board of Overseers,
The Nelson A. Rockefeller Institute of Government

9:45 A.M. - Plan and Process for the Working Seminar

Dr. Warren F. Ilchman, Director
The Nelson A. Rockefeller Institute of Government

9:50 A.M. - The National Reports - A Comparative View and an Identification of Issues

Discussion led by: Dean Hugh G. Petrie, School of Educational Studies, State University of New York at Buffalo

11:15 A.M. - Do the Reports' Recommendations Make Educational and Economic Sense?

Discussion led by: Dr. Alan P. Wagner and Dr. Frances Kemmerer, Center for Educational Research and Policy Studies, School of Education, State University of New York at Albany

12:15 P.M. - Lunch and Selection of Knowledge and Discussion Issues

1:15 P.M. - The Regents' Action Plan and the Emerging National Agenda: Reflections by Commissioner Gordon M. Ambach, New York State Education Department

2:00 P.M. - Knowledge and Discussion Issues

Moderator: Dean Robert H. Koff, School of Education, State University of New York at Albany

4:00 P.M. - Adjourn

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September 7, 1983

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SUMMARIES OF ARTICLES

Change and Continuity in Educational Policy
W. Paul Vogt

The National Reports: Research and Recommendations
Frances Kemmerer

The National Reports: Financing Improvements in Educational Quality
Alan P. Wagner

CHANGE AND CONTINUITY IN EDUCATIONAL POLICY

W. Paul Vogt

This paper serves as a general introduction to the more specific analyses of the likely effects and costs of particular reforms provided by Frances Kemmerer and Alan Wagner. It does so by presenting an overview of some of the main barriers to effective educational reform. By taking a global look at potential hazards in the path of the current reform movement, my intention is to predict the most likely sources of wasted effort and thus to increase the probability that reform proposals will be focused on policies that have the greatest chance of success.

After noting that the principle goals of most educational reformers today (as in the 1950s) are to offer educational improvements in the hopes of enhancing national strength, chiefly through economic and technological means, I conclude that there is little evidence that either the sources of America's economic and technological ills or the cure for them lies in the schools. Nonetheless, no matter how unrealistic or ill-defined the most commonly voiced goals, a broad consensus in favor of improving educational standards does exist. Thus, it is worth while to examine the potential resources for turning that vague but powerful consensus into concrete programs.

This is done by surveying the strengths and weaknesses of various agents of reform, including: parents and local citizens; teachers and their organizations; school boards and local educational administrators; the federal government and its education agencies; state governments and agencies. While there are many impediments to effective action for each of these groups and levels of government, it is with the last, state governments and agencies, that the greatest opportunities for successful reform rest.

THE NATIONAL REPORTS
Frances Kemmerer

This paper approaches the recommendations of the College Board, the Education Commission of the States' Task Force on Education and Economic Growth, the National Commission on Excellence in Education, the Paideia Group and the Twentieth Century Fund Task Force from the perspective of state officials interested in improving student productivity. First, the role of the state in education, with all the constraints and opportunities endemic to multi-level decision-making, is discussed. Next the major recommendations of the task forces are analysed in the light of relevant research and necessary linkages among recommended actions noted. Finally, a number of conclusions are drawn.

Briefly, the paper concludes that enhancement of productivity in schooling will depend, to a large extent, on the combined efforts of students and parents, as well as those of teachers, administrators and state officials. Further, both the individual nature of learning and recent studies suggest that as much emphasis should be placed on the time provided by students to learning as on the time provided to students for learning. With respect to the latter, improved use of available time would seem a natural prerequisite to costly increases in the school day and year. Issues related to the quality of time include both the definition and rewarding of teacher expertise and the content of the curriculum. With respect to teacher quality, both definition and incentive structures for drawing and retaining "good" teachers require study and discussion by groups of teachers, state officials and school of education faculty. It is likely, however, that the state will have to make a

major investment in salaries in order to maximize both efficiency and equity within and across schools and districts. Finally, the paper points to the fact that little is known about the functional curriculum of classrooms, that is, what is actually taught as opposed to the formal curriculum or what is "supposed" to be taught. This gap in knowledge needs to be remedied so that incentives to change curricula to conform with state objectives can be put in place.

FINANCING IMPROVEMENTS IN EDUCATIONAL QUALITY

Alan P. Wagner

A dozen national reports and educational reform efforts in nearly every state call for dramatic changes in the recruitment, promotion, and training of teachers, the content of the required curriculum, and the quantity of schooling. This paper provides an assessment of the costs required to implement a number of key recommendations in New York State and for the nation. The paper provides no thorough evaluation of whether the proposals will be effective in achieving their aims.

An estimated $2.2 to $2.4 billion would be required to implement the proposals in New York. The comparable figure at the national level is $24 to $26 billion. This represents about a 20 percent increase over current expenditure levels. Proposals intended to upgrade teacher quality, through salary increases and added merit pay, cancellable loans for students who become teachers, and required continuing education for existing teachers, would cost $1.1 to $1.5 billion dollars annually in New York ($12.1 to $16.2 nationally). Most of the increased costs come from the salary and merit pay proposals. Recommendations for upgrading the curriculum would cost up to $100 million to implement in New York State, and $1.4 billion nationally. Finally, the proposal calling for an increase in the school year would add an estimated $900 million to current educational expenditures in New York State ($9.8 billion for the nation at large).

Over time, the real costs of the recommendations might be expected to shrink. In New York State, the anticipated decline in the numbers of students throughout the 1980's translates into a 15 to 20 percent reduction in the

estimated costs of implementing the proposed changes. However, increased student enrollments from immigrant and minority populations, increasingly competitive markets for talented prospective and current teachers, and likely differences in the availability of qualified staff among school districts will tend to increase the costs of implementing the recommendations.

CHANGE AND CONTINUITY IN EDUCATIONAL POLICY: AN ANALYSIS OF CURRENT CONCERNS ABOUT EDUCATIONAL QUALITY AND AN ASSESSMENT OF POTENTIAL SOURCES OF REFORM

by

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I. INTRODUCTION

Prediction is a fool's game, but policy makers and those who advise them must play it. Evidence drawn from past experience is not infallible, for there are no good grounds to assume that the future will inevitably resemble the past--nor, on the other hand, are there good grounds to assume that it inevitably will not. In any case, historians and other social scientists who stress the advantage of longitudinal research at least provide evidence that can help turn our hunches about the future and about what can and ought to be done into educated guesses. In that spirit, this paper seeks to clarify the causes and likely consequences of the present "crisis" in American education and to focus on what educators at various governmental levels might do about it.

Historically, what has happened as a result of most proposals for change in education--or in any other aspect of government, such as bills in legislatures--is nothing. In terms of simple probabilities, therefore, we can expect most of the current group of proposed reforms to come to naught. Just as clearly, however, this does not always happen. From our perspective, the best single example of a reform movement that resulted in major innovations is that which led to passing the NDEA in 1958. Yet, despite the fact that many of the concerns and conditions of the late 1950s were similar enough to today's to produce an eerie sense of _deja vu_, the solutions of the 1950s are unlikely to be applied successfully in the 1980s. The 1950s give us our best clues about the sources of our current anxieties, but they provide little insight about the means to alleviate them.

Much of the following analysis can be thought of as "negative." It indicates that the goals of educational reformers are often unclear and/or

unrealistic, and that this has usually vitiated their proposals. Furthermore, efforts to improve educational standards have often been blocked by structural factors over which policy makers have little control, by a lack of political power to shape the institutions and programs that would produce increased educational quality, and, most often, by a combination of the two.

This "negative" analysis is, however, offered in a positive spirit. One of the greatest barriers to change in education in the past has been that reformers have underestimated its difficulty. The first step in initiating successful programs is a full understanding of the factors limiting our options. Only after having taken that step can we intelligently choose effective strategies.

The following sections of this paper deal, first, with the motives and goals of reform movements, past and present. It concludes that while the motives may be confused and the goals very hard to attain, what matters today for educational policy makers is that, for a variety of reasons, there is a general national consensus that improving the quality of instruction is an imperative social end. The next section of the paper considers the various sources of our capacity to attain this common end. It concludes that effective action is most likely to come at the state level. That, of course, is a somewhat paradoxical finding in a paper examining, from the perspective of the country as a whole, what is undoubtedly a national problem. But the paradox must be faced. We are confronted with a national issue that will be addressed most effectively at the state level--if, indeed, it is addressed at all.

Hence, our best general strategy is as follows: We need first to look at socio-economic conditions that inhibit and that are conducive to various sorts

of reform in the nation as a whole. That is the purpose of this paper. Next, we must examine the evidence pertaining to what might best be called the local economy of day-to-day eductional exchanges. Such evidence, neatly summarized by Frances Kemmerer, limits our options still further, but, in so doing, increases our chances of escaping a multitude of blind alleys in educational reform. Finally, after this dose of "negativism," we shall be prepared to calculate, on a state-by-state basis, the costs of particular reforms, as Alan Wagner has so persuasively done for New York State.

II. THE GOALS MOTIVATING REFORMERS

Throughout the 1950s, anxiety about America's economic, technological, and military strength led to several widely heeded expressions of concern about schools voiced by the likes of Arthur Bestor, James Conant, and Hyman Rickover. (Virtually anything Rickover, a sort of "technological Cassandra," said resulted in headlines.) Most of the worries expressed at the time are quite parallel to those of today: inferior instruction in mathematics, the sciences, and foreign languages; problems keeping teachers qualified in those fields in the schools; and the idea that the schools' concerns with social goals (in the 1950s, "life adjustment" and progressive education rather than integration and equality of opportunity) had taken an unhealthy priority over their properly educational tasks (Sufrin, 1963; Clowse, 1981).

When the catalyst of the Soviet sputniks was thrown into the brew in late 1957, legislators who had long favored federal aid to education (especially Senator Lister Hill and Representative Carl Elliott) at last had the right mixture. They seized the opportunity to enact legislation that, by the standards of the time, was rather sweeping and that broke with long-standing

tradition. A hitherto unprecedented amount of federal funds was channeled into state and local budgets. The ideas motivating this dramatic event are worth considering, for they very much resemble those currently stirring many to action--the only major difference being that the disquiet of the 1950s was expressed much more directly in military terms.

The basic notions behind the calls for reform were, and are, that: (1) America's education system compares very unfavorably with that of its major competitors: (2) a nation's economic prowess depends heavily on the quality of its education system; (3) the increasing technological complexity of the modern economy requires that workers have a concomitantly sophisticated education.

(1) America's Education System Compares Very Unfavorably with that of its Major Competitors. Educational reform literature has had a long history of pointing to the accomplishments of a frightening rival as a way to goad changes at home. This sort of comparative study became standard in reform movements, particularly after the German victory over France in 1871 was widely attributed to the strength of German schools. For example, arguments in favor of compulsory education presented to the Pennsylvania state legislature in 1871 stressed the fact that German children were required by law to attend school (the relevant documents can be consulted in Katz, 1971: 65-77). Historians analyzing such reports have generally concluded that they are quite uninformative about educational conditions in the rival nation, although they do nicely reflect the apprehensions of domestic reformers. Nervous attention in the 1950s was concentrated on Soviet schools (the U.S. Office of Education sponsored trips and studies). Today, Japanese education is held up as a model worthy of emulation. In any case, serious policy makers

need not concern themselves very much with such studies and reports. Their function is more ideological than informational.

(2) A Nation's Economic Prowess Depends Heavily on the Quality of its Education System. This belief has a long history in the United States. It dates back at least to Horace Mann in the 1830s whose conviction that education was of economic value was matched only by his lack of specificity about how it was (Church & Sedlak, 1976: 88-104). The strength of the tradition associating educational and economic progress is formidable--much more so than any evidence supporting it. While economic historians do generally agree that basic literacy and numeracy are very important for generating and maintaining economic growth, findings about the overall economic impact of education beyond a fairly basic level are much more ambiguous (Anderson & Bowman, 1976; Lundgreen & Thirwell, 1976). Some sociologists have even argued that by diverting resources away from productive uses and toward the pursuit of educational credentials, expanded post-compulsory education actually reduces a society's productivity (Dore, 1976; Collins, 1979).

Be that as it may, one thing is clear: many factors account for a nation's economic strengths and weaknesses--such as natural resources, rate of capital investment, size of the working population as compared to those either too young or old to work, effective demand for existing productive capacity, and so on. Among these factors, education is but one, and probably not the most important. Thus, focusing on educational cures for economic ills seems oddly misplaced--however welcome it may be to opportunistic educators concerned about the quality of school for other reasons.

(3) The Increasing Technological Complexity of the Modern Economy Requires that Workers Have a Concomitantly Sophisticated Education. This corollary to the argument about the general economic importance of education seems so obvious to most people that it is rarely challenged. Yet there is very little evidence justifying it. Major technological innovations, from their onset in the nineteenth-century factory to today, have usually resulted in lowering the skill level necessary for most workers to do their jobs--as when skilled craftsmen were replaced by factory operatives, who were often women and children. There are few reasons to suspect that today's "high-tech" revolution will be very different. With semiconductor technology, machines become easier to operate. When bank tellers and cashiers no longer have to know how to add and subtract, what need have they of high school courses in calculus and trigonometry? Indeed, it can be cogently argued that "overeducation" is at least as great a problem in contemporary America as any overall decline in educational standards. According to various estimates, between one-quarter and one-third of the U.S. work force is today overeducated, i.e., their intellectual skills extend far beyond any they could conceivably use in the performance of their jobs (Freeman, 1976; Burris, 1983).

In short, the people who design the new technology will need more skills, but most of us who simply use it will need fewer. Thus, the educational challenge for modern production, beyond a solid literacy and numeracy for the masses, can probably be met by making certain that a comparatively small minority of the work force gets the rare skills necessary to design new technologies. Programs providing monetary incentives to attract and retain professors of engineering are the sort of thing that is economically and technologically crucial.

But, there are tremendous social and political dangers in dividing a democratic society's population into an elite that needs highly advanced skills to do its work and a mass confined to routine tasks. Most of the current reports recognize--but few emphasize, as did Arthur Bestor (1953) in the 1950s--that a democratic society cannot long withstand such elitism and must educate all its citizens in at least the rudiments of a so-called elite education. In short, the grounds for general educational excellence are at least as social and political as they are economic. For example, from the early 1950s on, researchers have found that America's "elite" groups have a much stronger commitment to democratic values and civil liberties than does the "mass" public. The main factor accounting for this difference between the two groups is their varying educational levels. Thus, while the threat to the polity from an uneducated public is arguably as great as that to the economy, this fact has been but rarely stressed in the current crop of national reports on the state of schooling (Stouffer, 1955; Nunn et al., 1978; Hyman & Wright, 1979; McClosky & Brill, 1983).

While economic reasons for supporting improved educational quality are most frequently cited, many others are surely at work. For example, since most recorded declines in educational achievement have been worse among white than black students (Peterson, 1983), one wonders if some of the concern about excellence for the "average" student, especially if it is to be balanced against equal opportunity, might not be partly racist in origin. Probably more important is the fact that the citizenry's main worry about schools is inadequate discipline (Kirst, 1982) rather than educational standards as such. Making students buckle down to hard, unpleasant work is one way to discipline them. As in the 1950's, this school-as-boot-camp tone is a

significant undercurrent in most reformist pronouncements. Other motives and goals could be cited, but, they are in a sense irrelevant--if, that is, most people are agreed that educational excellence is the means to achieve them. When there is general agreement about the means to attain a wide variety of ends, that means becomes a new, common end.

Carrying this line of argument a bit farther, we can also conclude that the actual quality of education in schools is similarly irrelevant. By most measures of educational achievement, schools are not very different today from what they were five or even ten years ago. The actual condition of education almost always varies much less than the degree of anxiety about it. That generalization certainly holds for overall levels of academic quality in the United States since World War II. As Paul Peterson amply demonstrates, while there have been some declines in academic performance over recent years, they are "at most only barely statistically significant;" furthermore, we do not know whether they are attributable to "changes in schooling or changes in society." In sum, "signs of a nationwide decay are difficult to ascertain," and the "crisis in American education is greatly exaggerated" (Peterson, 1983: 38, 59, 157; see also Wolf & Lernes, 1983). Yet, despite the fact that such changes as there have been are comparatively insignificant when gauged against fluctuations in public mood from crisis to complacency and back again, we might still wish to take this opportunity to raise educational standards. And, even if the schools could be shown to be blameless for any drop in quality there may have been, we could in any case turn to them to repair the damage coming from other elements of society.

In short, "real" motives and "true" conditions of schooling aside, if we are committed to raising educational standards, what are the most effective

ways of doing so? From what levels of government and from which groups of educators are reforms most likely to come? There are five general possibilities, which we shall look at in turn: (1) parents and local citizens; (2) local school boards and administrators; (3) teachers and their organizations; (4) the federal government and federal agencies; and (5) state governments and agencies.

III. POSSIBLE AGENTS OF REFORM

(1) Parents and Local Citizens. There is strong evidence, stemming mostly from opinion survey data, that concerns about educational standards are widespread in this group. And, parents are potentially capable of exerting pressure on local schools--or of adding their weight to the efforts of local schools to do things such as assign more homework. According to opinion polls, most voters say they would be willing to spend more money on education if it resulted in improved quality (Newsweek, 1983). On the whole, however, at least since elections to school boards were removed from the direct influence of local political party organizations in the early twentieth century, (Counts, 1927; Tyack, 1974; Tyack & Hansot, 1983) citizen participation in educational politics has been low in degree and intensity. On those occasions when citizen and parental involvement has been greater, it has mostly taken a sporadic and negative form--as in opposition to busing or "humanistic" text books--and has not been sustained and positive, as it would have to be to foster educational excellence. We are unlikely to see an upsurge of Boston Mothers Marching for Microcomputers and similar pressure groups.

More money and, therefore, increased local property taxes will be needed to institute most of the reforms that have been proposed to enhance the intellectual quality of schooling. But, the recent history of the fate of school referenda is far from encouraging in this respect. Over the past two decades, the passage rate for new levies--whether calculated by number of elections or by dollar amount--has dropped from roughtly three-quarters to about one-third (Wirt & Kirst, 1982: 166-177). Among the main causes for this are the demographic trends that have reduced the number of school-age children in most districts, have resulted in a smaller proportion of voters who have children in school, and have increased the voting strength of retirees who have a high turn-out rate and who tend to be short on income and long on the kind of wealth school districts tax.

In short, whether one looks at the amount and character of citizen involvement in educational politics or at the fate of school referenda over the recent past, the most salient trends do not make it likely that parents and local citizens will be a potent source of reforms improving educational standards.

(2) Local School Boards and Administrators. Despite a long history of local control in American education, a continuing commitment to it, and the persistence of the myth that it still exists, educational officials at this level have little effective power to make decisions that directly shape major school policies and outcomes (Peterson, 1974). Indicative of the trend of reduced local control is the declining share of educational expenditures coming from local sources. Since 1930 it has shrunk from over 80 percent to around 43 percent. The slack has been partly taken up by federal funds (now 9 or 10 percent), but mostly by state governments, whose share has grown from

roughly 17 percent to about 47 percent over the past five decades (U.S. Department of Education, 1982). The growth in the percentage of the local budget that has come from outside the districts has, of course, been accompanied by increased outside control--from the federal government and, more importantly, state governments--in the form of bureaucratic regulations with which local boards and administrators have had to comply.

As the number of school districts declined since World War II from around ninety thousand to about fifteen thousand--and, consequently, the size of individual districts swelled--board members were compelled to delegate most of the work of running the district to superintendents and central office staffs. But the power of the superintendent, like that of the board, has become more nominal than real. Superintendents have become, at best, mediators between power groups and are at the mercy of the boards whose only serious function seems to be to hire and fire superintendents (Cuban, 1976; Zeigler & Jennings, 1974). And, when we get down to the level of the individual school or building principal, we find an administrator who mostly administrates regulations formulated by others. The main discretion the principal has is in the area of personnel matters, and this is usually strictly limited by union contracts,[18] tenure and seniority rules, and state legislation pertaining to them.

For all these reasons, in short, local officials, whether elected or professional appointees, have little direct power or financial wherewithal to foster curricular reform. Of course, since state decisions must be filtered through the local districts, their willingness to go along is crucial. But,

like voters, and as we shall see, like teachers, their main powers are negative and lie in an ability to resist change, not in a capacity to initiate it.

(3) Teachers and Their Organizations. Teachers can surely be expected to be enthusiastic about some aspects of the current drive to raise standards. Augmenting the importance of curricular content can only raise the status of teachers (especially those courted teachers in certain fields) and increase their authority. It is a truism that the success of any curricular reform depends heavily on what teachers do in their day-to-day interactions with students. Any changes in attitude by parents, students, and administrators that entail taking course content more seriously will undoubtedly be welcomed with alacrity by the majority of teachers who can be expected to use the opportunity to improve educational quality. On the other hand, much evidence indicates that teachers tend to be very conservative about their tried-and-true methods and have been rather likely to resist curricular and methodological changes, usually quite effectively (Sarason, 1971; Lortie, 1975; Schofield, 1972; Weick, 1976).

Furthermore, teachers are caught in the same demographic squeeze felt more generally in education. Their salaries in real dollars have declined, for, despite shortages in some fields, there continues to be an oversupply of qualified teachers in most. That surplus, as well as the drop in the number of children of school age, is expected to last for several years. While teachers and their unions will surely welcome calls to raise salaries to improve the quality of instruction, doing so will be an uphill battle, since it runs counter to strong downward market and demographic trends. And, differential pay scales to attract science and mathematics teachers is likely

to be stoutly resisted by the general group of teachers--especially if, as seems probable, such differentials are to be drawn from a stable or shrinking pool of money for salaries.

The same considerations apply, only more so, to most schemes to introduce "merit pay." If additional funding for teacher salaries as a whole is not forthcoming--and, given growing budget deficits, it is hard to see from where it will come--any merit pay increases for exceptional teachers will have to be at the expense of salary increments for ordinary teachers. In addition, even if we had reliable, non-controversial measures of the quality of teaching, which we do not, teachers' unions can be counted on to oppose any salary plan that pits members against one another. Competition among members of a group weakens its solidarity, which is obviously the main source of a union's strength. Administrators, on the other hand, tend to favor merit pay for the same reasons unions resist it: it weakens the bargaining strength of unions and increases administrative discretion. Teachers have effective state- and nationwide organizations for making their will felt in this regard--and so do school boards and school administrators. When opposing forces are this closely balanced, the probability of change is low.

Thus, teachers, like administrators and parents concerned about education, are trapped in a situation of overall powerlessness and dwindling resources--one in which a teacher's hope for mere survival in the next round of lay-offs counts as optimism. It appears, therefore, that leadership and funding for new programs will come from federal and state sources, or it will not come at all. Before turning to those governmental levels, however, it is well to point out that there is one change, seemingly related to excellence,

that local schools could institute, and which would probably be supported by many parents, teachers, and administrators.

Tracking, whether by ability group or achievement group, fits in well with most peoples' conception of educational excellence. Given that it seems only logical that one can do a better job of educating by teaching students of like ability and achievement in the same classroom, and given that this can be done for the most part without additional funding or personnel, we may see a great deal more of it in the near future. And, we can certainly expect to hear more from those fond of talking about the "gifted and talented" as though this were a beleaguered minority group long suffering under the yoke of discrimination. Regardless of the fact that many studies have shown that, pedagogically speaking, tracking helps no one and hurts less able students, it is a deeply rooted impulse in American (and European) educational traditions. Schemes of common schooling have rarely persisted against its influence. And, while the pedagogical effects of tracking are dubious at best, the social consequences are clear and pernicious, chief among them being stereotyping, the self-fulfilling prophesy, and within-school racial and social class segregation justified by achievement level (Schofield, 1982; Morgan, 1977; O'Reilly, 1970). Unless quality is totally to obscure equality, tracking will have to be avoided, despite the fact that it is one of the few changes apparently fostering excellence that local educators and parents might agree on and be able to afford.

(4) The Federal Government and Federal Agencies. A brief summary of Peterson's analysis of the history of the federal role in education provides fairly firm guidelines to the future (Wirt & Kunst, 1982: 282; Smith, 1982). Despite the fact that the federal share of total educational expenditure has

doubled since 1960,[22] it remains below ten percent and seems very unlikely to increase under the Reagan administration. Furthermore, most of the federal contribution since the 1960s has been directed toward educational equality rather than general quality. (It must be remembered, however, that the popular quality-equality distinction is partly based on a false dichotomy. A program to improve equality of opportunity for educationally disadvantaged students is, ipso facto, a program to raise the quality of education for such groups and, thereby, to raise the average level of educational performance for students as a whole.) If current federal trends persist, and there seems little question that they will, the states and localities can expect limited help at most from the federal government; and, any aid that may be forthcoming is likely to be of a particular sort.

As Peterson recounts, federal aid to education in the twentieth century has taken two forms: (a) block-grant expenditures that leave wide discretion to states and localities as to how funds are to be used; and (b) categorical aid, which rather precisely earmarks how and upon whom the money is to be spent, and which is accompanied by more or less rigorous accounting procedures to insure that the aid is being used as intended. Of course, this distinction is in fact more one of degree than of kind. There has never been any completely general, no-strings-attached federal aid, nor, on the other hand, has any aid program ever been so categorical as to leave no discretion to states and localities. Nonetheless, differences of degree and emphasis have been significant and are real enough to have had important consequences.

These two forms have followed the two main functions of federal school aid in the twentieth century. Block-grant monies have been aimed at helping schools maintain or increase quality in the face of some real or perceived

crisis--although funding has usually continued after the crisis has passed. Categorical aid, on the other hand, has been directed at particular categories of persons in the society who had not fared well in ordinary school programs. Categorical aid has thus compelled schools to do what they previously had done little of and what they probably otherwise would not have done for children in specific social categories. Conversely, block-grant aid has enabled schools to do what they probably would have liked to have done, and might have done in any case, for students who did not necessarily come from an identifiable social group. In either case, whether the aid was categorical or came in the form of a block grant, continuance of a program has depended rather less upon continuing need than upon the ability of well-organized interest groups to mobilize support for it, especially among influential senators and representatives.

Another important source of a federal presence in American education has been court decisions, particularly when these have been supplemented by legislation and agency practice, as the Brown decision of 1954 was after 1965. While it is not wholly impossible to imagine court cases related to general educational excellence, such are highly unlikely--if for no other reason than it is not readily evident under what statutory or constitutional provisions schools could be sued for failing to be excellent.

On the basis of these considerations, we can predict that any federal aid for raising standards will most likely take the block-grant form and serve the function of helping schools to attempt what they might well be expected to try to do in any case. The federal program of the past most closely resembling what we could expect in the near future is the NDEA, passed in 1958, phased out in 1981. Indeed, many of the conditions pertaining to the late 1950s are

similar enough to today's that the story of the NDEA is worth recalling (Clowse, 1981; Sufrin, 1963; Berke & Kirst, 1972).

Briefly, the characteristics of, and the conditions for, NDEA legislation were as follows: the NDEA proponents were mostly concerned with "manpower" in scientific and technological fields. The Act came in the wake of a period of mounting anxiety about educational excellence. Money was distributed in block-grant form, with few strings attached and was, over the years, spent on an increasingly unspecified and general series of educational ends. Despite the fact that the NDEA was very lightly administered (Title I prohibited "any direction, supervision, or control over the curriculum, program of instruction, administration, or personnel of any educational institution or school systsem"), there were many complaints about the heavy hand of the central government. As today, governmental action for excellence in 1958 was made more difficult by the need to deal with budgetary problems in a recessionary economy. Finally, while support for the legislation was initially widespread, it was not concentrated or organized enough to maintain levels of funding (which dwindled rapidly through the 1970s) or to produce pressure to conduct evaluations on the effect of the expenditures. Not surprisingly, the death of the NDEA in 1981 went all but unnoticed.

Certain of these characteristics are reinforced by more recent trends and make it probable that something like the NDEA experience will be repeated. The present federal administration has a well-known preference for block grants. It is likely that the litany of objections to federal red tape will be if anything more insistent and frequently chanted than in the past. Thus, any monies from the federal government are as likely to be spent for middle- and upper-class tax relief in states and localities already committed to doing

what the federal government might try to encourage, as they are to be spent for doing something new to increase standards. Lastly, since any expenditures for educational excellence are not apt to stimulate the development of well-organized and highly specialized interest groups (such as the American Vocational Association) that can encourage members of congress to do the logrolling necessary to keep the funds flowing, any aid program will probably be of comparatively short duration.

Of course, there is one further possibility: there will be no federal aid of any sort, at least before 1985--and after, if the next administration has the same priorities as the current one. While it is impossible to measure these things precisely, it seems that the current sense of crisis is less acute than that Americans felt in the 1950s, influenced as they were by cold war notions of a race for survival. There is today no Krushchev threatening to "bury" the United States, and there have been no frighteningly symbolic events like the two sputniks to which orators could easily refer in such terms as "the Pearl Harbor of Education." Also, there is no baby boom putting constant pressure on educators to cry out for funds. Furthermore, the Reagan administration seems less inclined than was Eisenhower's to acceed to popular demands (which are weaker today than in 1957/58) for federal aid to education. Finally, even were a Democratic administration and Senate more favorably disposed to spending on education to come to power in 1985, budget deficits, which by most predictions will continue to grow for the indefinite future, will severely limit the capacity of the federal government to spend on education.

While all of the conditions favorable to the passage of the NDEA do not pertain today, in some respects they may not have to. Federal legislative

activity in education since 1958, and especially since 1965, has set up the machinery to the point that a senator or representative need not shatter a precedent (that role has passed to the executive branch) to propose a federal aid bill. Indeed, there is currently before the Congress a very NDEA-like bill (HR 1310, S 1258) for $425 million to be split between the Department of Education and the National Science Foundation for grants to improve instruction in mathematics, the sciences, foreign languages, and engineering. Whether this bill, which passed the House in March 1983, will get through the Republican controlled Senate and whether, if it does, proposed cut-backs will leave enough staff in the Department of Education and the National Science Foundation to administer it, remains to be seen.

In short, there are two possibilities: (a) the federal government will do little if anything beyond campaign rhetoric; and (b) whatever it does, such as the bill now in Congress, will provide aid mostly in block-grant form (or directly to students). In either case, responsibility for improving the quality of education will rest primarily with the states and localities. We have already seen that local schools and districts have little room for maneuver. The states have rather more.

(5) State Governments and Agencies. The main losers in the shifting educational power configurations since World War II have been superintendents and school boards. While popular opinion usually attributes this to the growth of federal control over local educational policy and programs, in fact, the main gainers have been state legislatures and education agencies, with the chief state school officer generally having greatest responsibility (Wirt & Kirst, 1982: Chapters 8-9; Campbell & Mazzoni, 1976; Fuller & Pearson, 1969; Murphy, 1980). The trend toward state hegemony began in the nineteenth

century as the several states established comoulsory attendance laws and minima below which local schools were not allowed to fall. Although there is still considerable variation from state to state, the trend is clear. Whether it is a matter of the number of days pupils must attend per year, student records, per-pupil expenditure, the system of grade levels, salary schedules, tenure rules and certification requirements for teachers, text books, taxation regulations, or suggested and mandated curricula, state governments and agencies have increasing salience for what goes on in schools and are the most likely sources of major reform.

As discussed above, increases in spending on education at the state level have been greater over the last few decades than at either the local or national levels. Furthermore, most federal monies for education, even highly categorical types of federal aid, are in fact administered by state agencies. Indeed, arguably the longest lasting effect of the Elementary and Secondary Education Act of 1965 (especially because of Title V of that Act) was to increase the size and power of state education departments.

The trend toward the defeat of local school referenda, remarked upon above, has also tended to increase the state share of overall education expenditure and, therefore, control. The most dramatic example of this sort of development, of course, occurred in California when the passage of Proposition 13 caused the state share of educational expenditures to jump from less than half to nearly three-quarters--in one year. Similarly, school finance reform--triggered by state court actions such as the Serrano, Seattle, and Levittown decisions--has also increased state-level involvement by divorcing the amount spent in localities from local resources.

Although state governments and agencies may well exert more control than any other set of policy makers, their discretionary power is certainly limited by budgetary constraints. Most recent state efforts seem to be pointed in one general direction: attempting to raise quality by using one form or another of competency test. According to Peterson,[26] there are at present Competency Based Education programs in thirty-seven states, and in seventeen, students have to pass some sort of examination in order to earn a high school degree. Further, by my count, as of March 1983, nineteen states required that prospective teachers pass the National Teacher Examination or some equivalent before they could be licensed.

Two reasons explain this testing trend and lead one to expect it to continue. First, there is a general social vogue for reliance on achievement examinations of one sort or another, whether to rank potential employees or to screen entrants into educational programs that have some promise of yielding useful employment credentials. The second reason is that introducing such tests has a low opportunity cost for states and localities. It can be done quickly (much more so than, say, training new teachers). It can be done with little effort (by purchasing tests rather than composing them). And, it can be done more cheaply than virtually any other major reform, such as raising salaries, lengthening the school year, or buying better text books. (Besides, the students can sometimes be made to bear the cost, as with the National Teacher Examination.)

IV. CONCLUSIONS

It is easier to predict what is unlikely than what is likely to occur. Similarly, barriers to effective reform are usually more visible than are the

means to accomplish rationally planned change. Finally, the unintended deleterious consequences of proposed actions need to be kept in mind. It is, in short, far simpler to be negative than positive, but the positive value of such "negativism" is great: it serves to reduce the number of otherwise attractive hypotheses about what can and/or should be done, and thus increases the efficiency of reform efforts.

The most obvious and the largest barrier to instituting many of the proposed reforms is money. For reasons alluded to above, it seems highly unlikely that the vast new sources of funds necessary--to, say, lengthen the school year, or significantly raise overall teacher salaries, or hire thousands of new teachers--will be forthcoming from the federal government. Certain limited incentive programs in mathematics and the sciences are rather more likely--particularly should politicians more favorably disposed to social spending gain control of the Presidency and the Senate. At the state and local levels, the financial picture is, of course, much more variegated. Texas will probably be less economically constrained than Ohio for the indefinite future. Miami or Atlanta may have more budgetary flexibility than Chicago or New York City. In any case, the inverse relationship that always pertains between the cost of a program and the likelihood it will be adopted is even stronger than it has been in the recent past--much more so than it was, for example, in the late 1950s.

The second major limitation to educational reform in the 1980s is a lack of effective political authority and/or influence to initiate the required changes. The federal government is generally too distant from the day-to-day running of schools to institute effective programs in most fields, even if the legislative and executive branches desired to so involve themselves. Many,

and probably most, localities lack the authority and the tax base to inauguerate major change. What we are left with, in short, as the most likely and most probably effective reforms, are those that originate at the state level. Despite considerable variation in state control over education from the high of California to the low of Nebraska, the burden of change will rest in most instances on state governments and education agencies. This is in part because of the long-standing trend toward state control of education over the past several decades, and in part because of the more recent stasis or even slight decreases in the constraint of federal regulations. Given this, it is not surprising that the majority of the interesting initiatives in recent months--e.g., New York's Action Plan, Tennessee's Master Teacher proposals, California's revised teacher salary scales--have come from the states, not federal or local agencies and governments.

If we can assume that most states will make some sort of effort to improve educational quality, what will be the likely results? In the first place, it must be noted that states will be competing amongst themselves and will be attempting to use educational reform either to maintain a current favorable position or to help reverse population and tax-base trends that have eroded many of their education systems. In other words, to be efficient in the long run, reforms will have to raise educational quality and to be striking enough to attract the attention of those businesses and individuals who might base a decision about whether to locate in a particular state on the excellence of its system of public education. All this will, of course, have to be done through programs costing less than the projected benefits.

How are states likely to approach this problem? Given budgetary limitations, most states will realistically have to focus on comparatively

inexpensive proposals. This does not necessarily mean ineffective proposals. For example, devising means to enable students to spend more "time-on-task" while in school might well be more effective and almost certainly less costly than lengthening the school year. More immediately, states may well concentrate on raising high school graduation requirements. Since adding new courses of study raises the political problem of which courses are to be subtracted from the curriculum in order to make room for the new requirements and/or the economic problem of locating funds to hire new teachers, the path of least resistance is to raise standards for graduation by instituting achievement tests that must be passed in order for a student to graduate. This can be done relatively quickly and inexpensively and has the added advantage of being a highly visible reform.

There are, however, important social costs that any state will have to pay for adopting this approach. The problem, simply is: what about those students who do not pass the examinations? If they are to be denied diplomas, the harm inflicted upon them in a credential-oriented job market would be very great--and, the more rigorous the testing program, the more students who would be thus penalized. Raising graduation requirements by instituting such examinations would also almost surely impell greater numbers of students--particularly those who believed, rightly or wrongly, that they had little chance of passing--to drop out before completing studies, and this, in turn, could reduce the overall achievement level of the adolescent population. Another variant on the achievement-examination theme would be to institute a hierarchy of degrees (e.g., Britain's O- and A-level certificates or New York's Regents and General diplomas). Such a dual-degree system would almost inevitably lead to the tracking of students preparing for the different

sorts of degrees. While that sort of tracking would probably appeal to parents whose children would be educated in the elite tracks, the socially and educationally pernicious consequences of tracking mean that it ought to be resisted by responsible education officials.

We are left, then, with the hackneyed but nonetheless true conclusion that there are no easy solutions, no "quick fixes," no costless approaches. But, there are certain grounds for optimism. The current round of reform proposals may have great value even if, as seems likely, most of them do not lead to the changes they propose. Their value may be chiefly symbolic. They indicate that for a variety of reasons Americans may have begun to take education more seriously than in the recent past. That extra seriousness may be the main thing that is needed. Our current schoool facilities often are adequate--if students, teachers, and parents utilize them to the full. For example, the decade-long decline in SAT scores has been slowed and even slightly reversed, and that happy event occurred before the most influential reports were issued and before the "crisis" in American education became news. If the legislative, administrative, scholarly, and task-force activities so salient in 1983 have no other consequence, they may at least contribute to the swing in national mood concerning education from indifference and/or pessimism to a more realistic desire to exploit the not inconsiderable but under-utilized capacity of schools to educate.

THE NATIONAL REPORTS: RESEARCH AND RECOMMENDATIONS

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Introduction

The decline in achievement scores, the shortage of qualified teachers in mathematics and science, the fear of losing the competitive edge in the world marketplace, the apparent lessening of the federal commitment to public schooling have all combined to once again raise the issue of school quality to the level of a national debate. In the past six months, five major reports have been published and at least three more are underway. While the reports address different audiences, their burden is much the same, the average student is graduating from high school without the skills necessary for lifelong learning either on the job or in postsecondary institutions. Consequently, most of the reports recommend more intensive and extensive allocation of time to learning, curricular reforms, and improvement in teacher quality and school management. The recommendations for elementary and postsecondary institutions are for the most part also intended to provide the basis for or act as incentives for increased student effort at the secondary level (see Appendix A for a listing of the recommendations).

This paper approaches the recommendations of the College Board, the Education Commission of the States' Task Force on Education for Economic Growth, the National Commission on Excellence in Education, the Paideia Group, and the Twentieth Century Fund from the perspective of state officials interested in improving student productivity. It evaluates the major recommendations in the light of relevant research, indicates important linkages among recommendations, where such exist, and anticipates some of the effects of implementation of the recommendations. Before turning to the

literature review, a brief description of each report is provided and the role of the state in educational decision making is discussed.

The Reports: Audience and Focus

The College Entrance Examination Board's Academic Preparation for College is the result of a ten year effort, the Educational Equality project, to strengthen "the academic preparation of all potential college entrants" (College Board, 1983). The report, based on extensive interviews with high school and college teachers, details the competencies and subjects necessary for student success in college. Although the recommendations are for aspirants to non-vocational postsecondary schooling, "discussions with leaders of business and industry confirm...that much of the learning described here also can be valuable to students going directly into the world of work."

The report of the Education Commission of the States' Task Force on Education and Economic Growth echoes the College Board's concern that there are "powerful arguments for mounting a major national effort to improve the quality of education in our secondary schools" (College Board, 1983). Rather than emphasizing "the stunted hopes" of students, this task force, of mostly state governors, urges its recommendations on the basis that "continued progress in American education is vital to our national survival" (Education Commission of the States, 1983). The report, Action for Excellence, eschews the traditional "basics" and the acceptance of a basic minimum performance from students and recommends the raising of standards to emphasize higher order learning skills. Standards would be raised both for the most able and the least able. Instead of outlining a new curricula, the "action plan" calls

for new partnerships between business, education, and government for the purpose of determining what skills and subjects are necessary to meet the demands of a technological society, and assisting and monitoring the implementation of reform.

Addressed to the nation at large, the report of the National Commission on Excellence in Education, like those of the College Board and the Education Commission of the States' Task Force, calls for curricular reform and the raising of educational standards. This time the demand for increasing school quality is in the name, however, of the survival of democracy and continued national "prosperity, security and civility" (National Commission on Excellence in Education, 1983). Ironically, while the eighteen member panel appointed by the Secretary of Education views educational improvement as clearly in the national interest, it places the primary responsibility for financing the reforms squarely on the shoulders of the states. The bulk of the recommendations address qualitative and quantitative issues related to the organization and content of schooling. The federal government is asked to fulfill its traditional role of aiding groups of students, who by reason of economic or physical handicap or academic talent are different from their peers; collecting information on educational systems; and supporting basic research and the evaluation of its own programs.

The Paideia Proposal, the work of a distinguished group of educationalists, is first addressed to school boards, administrators, teachers and parents and then to elected officials "searching for ways to improve the quality of education without increasing the cost," and finally, to other categories of the citizenry (Adler, 1982). Its message is simple and straightforward. All K-12 students should study the same curriculum, namely,

language, literature, and fine arts; mathematics and natural science; and history and geography. Language study would include foreign language, which would be introduced in primary school. Student choice would be limited to the selection of this second language and there would be no tracking. The proposal specifies both the goals of subtopics and instructional methods to be used in these three subject areas. All other subjects currently in the curriculum would be dropped or offered as extra-curricular activities. In essence the proposal is for the much hailed but rarely seen "common" school, where students from different backgrounds are brought together to share a common learning experience.

Finally, Making the Grade (1983), the report of the Twentieth Century Fund's Task Force on Federal Elementary and Secondary Education Policy, is distinguished by both its orientation and Peterson's incisive background paper on the history and effects of federal involvement in schooling. Unlike the reports already discussed, the recommendations contained in Making the Grade are, of course, directed at increasing the federal role in education. "The federal government, after all, is charged with providing for the security and well-being of our democratic society, which rests largely on a strong and competent system of public education." The recommendations address such issues as raising the status of teachers, providing choice within public systems and providing a new type of impact aid for districts with concentrations of immigrant or disadvantaged children.

Regardless of the various commissions' assignment of tasks and financial burdens, the constitutional responsibility of the states for education indicates that if the quality of schools is to be improved, the states will

have to play the leading role. The limitations of this role are discussed next.

Decision Making in Education: From the Top Down or the Bottom Up?

> Planners, no matter how much discretionary power they have, never determine the actual outcomes of policy. They can only set in action forces which they anticipate, with or without rational justification will have certain effects. The effects themselves are the result of the millions of micro-decisions made by individuals who are responding to the planners' policies in terms of (1) the actual pattern of rewards (positive or negative) which their decision matrix presents and (2) their perception of this pattern.
>
> (Windham, 1978)

Educational decision making is frequently conceived as a pyramid with state officials at the apex and students at the base (see Thomas [1977] for an alternate approach). This view unfortunately casts students in a passive role, as though they were simply receptacles for curricula and values. By the same token, schools are perceived as "productive" or "nonproductive" in relation to the average achievement of their students, as if learning is produced by groups rather than individuals and as though families provided their children with neither curricula nor resources.

A truer picture of educational decision making might be represented by a series of concentric circles, with influence flowing bilaterally across the boundaries of each ring. The outermost ring or circle would represent the federal government, whose actions by statute or regulation, either constrain or provide opportunities for the state. While the states have delegated to local districts a great portion of their responsibility for the financing and control of schools, most have retained the authority to regulate the school

schedule, establish certification requirements for school personnel, recommend or mandate curricula, administer statewide tests and establish the criteria for graduation from each level of schooling. In exercise of this power, the state may hinder or facilitate the goal attainment of districts. For instance, if the state raises the academic prerequisites for a high school diploma, districts must make the appropriate allocatory decisions, regardless of whether the particular community places a high value on academic achievement relative to say occupational education or athletics. Conversely, if the majority of districts in a state rank academic learning lower than other school purposes, the new requirements even if passed by the legislature eventually will be repealed by popular demand.

The school district, of course, occupies the next ring in this construct. The function of the district is to collect and distribute resources among the schools in its jurisdiction. It "collects" revenue from federal, state and local governments and, through contractual agreements, translates the revenues into personnel, space, equipment and supplies. By virtue of its power to draw boundaries, it also "collects and distributes" non-purchased resources, that is, the students and their parents, among component schools.

The next innermost ring represents the school. Dependent on the district for both purchased and non-purchased resources, it acts as a "switching station" dealing in "potentialities" (Barr & Dreeben, in press). Teachers, aides, space, texts, supplies are matched with students, generally of a certain age, sometimes with a certain range in ability. Student and teachers rarely select each other. Class assignments are generally made by administrative personnel, except in the case of large city schools where

students have some choice and wealthier than average school districts where faculty make these decisions (Ferguson, dissertation research in progress).

Within classrooms, teachers have the formidable task of providing appropriate resources to individuals with differing characteristics. The task is made difficult by the fact that the class is almost by definition a group, most instruction is of this group or subgroups but groups do not learn. Consequently, the selection of tasks, the pacing of material, the division of teacher time has to be done in such a way that the time of neither the brightest nor the slowest students is wasted. The teacher's organizational and curricular decision making is constrained not only by the availability of purchased resources but by his/her own training and abilities, as well as the previous schooling and ability of the students, their expectations and the value their parents place on schooling.

The next set of decision makers and those closest to the student are, of course, his parents. Unless they are poor and hence have little choice with respect to residence or alternative schools, they have either actively or passively selected the district and sometimes the school their child attends. Nor are they without influence in the matter of teachers and may exercise some discretion with respect to courses of study, at least in high school. Like the decision makers already discussed, parents can be expected to have their own sets of priorities and preferences for their children's schooling. Thus, at home, they may stress different disciplines than those emphasized at school or they may complement the school's curriculum by providing services which are not provided in school (e.g., remediation, computer literacy, music lessons).

The individual student stands at the heart of the circle. The preeminence accorded him is based on the acknowledgement that only he can produce learning

by combining his time with the resources provided by both school and family. While the time of students, too young for full employment, has historically been considered costless, students who devote time to one curriculum or subject forego opportunities to study other curricula or subjects, as well as opportunities in athletics or music or time for just plain socializing (Thomas, 1977). Awareness of these non-monetary but very real costs is important if policy makers wish to offset the costs and increase the benefits students associate with learning in general and learning particular subjects.

In sum, the structure of decision making in education is such that the decisions of any one set of actors cannot be usefully considered apart from their anticipated effects on the costs and benefits faced by other decision makers in the system.

Time to Learn:
The Recommendations in Perspective

The opportunities and costs associated with learning can all be subsumed under the rubric of time; the time provided to students for learning and the time provided by students to learning. There is no such thing as free time. All time expenditures, as the colloquialism itself suggests, are costly either in terms of dollars or opportunities and often in terms of both.

Many of the recommendations outlined in Appendix A are concerned with the quantity (of the schooling period, school year, school day, instructional time within the day) and quality (of teacher time, text books, curriculum) of the time provided <u>to</u> students. Relatively little is said about the quantity and quality of time provided <u>by</u> students to their studies. Yet student time is

the only indispensable input in the production of learning. The extent to which students supply their time and effort to instructional tasks therefore affects the efficacy of all other inputs into the educational process. Because of the importance of student time both perspectives on learning time are considered in the review of the literature which follows.

The Length of the Schooling Period

As the struggle to provide universal elementary schooling ended in the last decade of the nineteenth century, the campaign for mass secondary education began. Motivated, in part, by the fear that the poor would be left behind in the race for success and, in part, by the great folk myth that "specialized technical knowledge is the key to economic development, societal pressure mounted for increased high school enrollments" (Cohen & Neufield, 1981; see also Foster, 1965).

In 1870 only two out of every 100 seventeen year olds graduated from high school. At the turn of the century, the number had grown to 6.4. By 1950, 59 out of every hundred graduated and in 1968, the proportion finishing peaked at 76. Since 1968 the proportion has slightly decreased each year to its present level of 73.6 (Grant & Eiden, 1982). These statistics do not incude those who later returned to school and who, therefore, graduated at an older age or seventeen year olds who earned high school equivalency diplomas. In 1980 an estimated 487,893 individuals of unspecified ages were awarded such certificates (National Center for Education Statistics, 1983).

It was not until the fifties and early sixties, when the dream of universal secondary education was all but fulfilled, that leaving school before graduation became "socially unacceptable" (Cohen & Neufield, 1981). Early leavers, in government documents and scholarly journals alike, were

labelled as "dropouts" and viewed with concern. Certainly, a great part of this concern was due to the heavy minority bias in this subpopulation. In 1970, individuals who were neither in school nor graduated from high school were twice as likely to be black as to be white. More recently, the proportions have shifted. 12.1% of all non-graduates between the ages of 17 and 34 years of age are white and 18.8% black. Among the sixteen and seventeen year olds whites now dominate, 9.2% compared to 6.9% (Grant & Eiden, 1982).

A second source of concern stems from the high unemployment rate among the early leavers. While 18.9% of the 1980 high school graduates not enrolled in college are unemployed, 31.6% of the 1979-80 dropouts 16 to 24 years of age are unemployed (Ibid.). The cause of the difference in employment rates is not known. Some would hold the difference stems from the importance of credentials, while others would claim that individuals from this group are, for a variety of reasons, less productive workers.

Dentler and Warschauer's (1965) classic study of early school leavers provides a profile of the typical dropout and the economic conditions associated with high dropout rates. They found that early school leavers tended to come from low income families, whose adult members had relatively poor educational backgrounds. The dropout himself was usually one grade level below his age mates. In general, high dropout rates tended to be associated with depressed local economic opportunities. Cities with high dropout rates among nonwhite students contained fewer wealthy families, higher proportions of nonwhite unskilled laborers, higher illiteracy rates, and higher white dropout rates, than did other cities of comparable size. Cities with high dropout rates among white students were characterized by relatively large

poverty populations, smaller than average white collar labor forces, and stable or declining populations.

Unfortunately, little research is available on the relationship between school characteristics and early withdrawal. In 1981, the New York State Board of Regents, attempting to halt the rising dropout rate, threatened to withdraw the degree granting power of any school, public or private, with a retention rate of less than 90%. A recent study suggests that the threat acted as an incentive in at least one school. Project Intercept in Ossining relying on the involvement of teachers, parents and students effectively reduced the dropout rate from 6% to 3%. While only 3% of the high risk students in the experimental program dropped out of school, 32% of the control group, who received no counseling, left. Since the program also had the effect of reducing absenteeism and no doubt changing attitudes, the achievement of the students in the experimental group also rose (Maurer, 1982).

Oddly enough, very little is known about the larger issue; namely, the relationship between each additional year of high school and increments in knowledge and skills. Frederick and Walbert (1980) in their review of related literature concluded that "it is difficult to say whether people know more because they attended school longer or attended school longer because they were more capable." Clearly, the question of diminishing marginal returns to additional years of schooling needs to be explored. One suspects that in a situation as supportive as the one described by Maurer that the 3% who left the experimental program made this calculation for themselves. If we are willing to admit that high school is not for everyone, the next question then is whether there is a substitute experience which might prove useful for these youngsters or is high school "the only path to the good life" (Westbury, 1977).

The Length of the School Year

As secondary school gained importance, the large historical differences among and within states in the length of the school term began to disappear. At the turn of the century the range among the states was approximately 120 days (U.S. Department of the Interior, 1898). In Nebraska "three hundred districts maintained less than a three month term and eight hundred and five more than three but less than six" (Cubberly, 1905).

Adjusting mandatory school terms by average daily attendance (ADA), Grant and Eiden (1982) report that in 1975-76 the average length of the school year was 178.3 days, with only eight days' variation among the states and the District of Columbia. The District of Columbia had the highest average, 182 days, and Illinois the lowest, 174.1. New York, with an average term of 177.3, fell just below the national average. In the nation as a whole, ADA was 90.3% of enrollment. In New York the figure was 86.7%. Thus, while the average student in the U.S. attended school 161.1 days in 1975-76, the average enrolled New Yorker attended 153.8 days.

It can be assumed that differences in attendance are greater within states, within large districts and among different categories of students. The New York Times in February 1970 reported, for example, that "On any current school day, many urban schools report more students absent than present."

In an analysis of data from a national study in England, Douglas and Ross (1965) found comparatively small differences among social classes in daily attendance during primary grades. By age nine, however, absences among children from the manual working classes were far more frequent than absences of children from other social classes.

Heyns' (1978) findings from a study of sixth and seventh graders in Atlanta are similar. "Students who miss large amounts of school are not, of course, just like students who attend more regularly. The most consistent predictors of the propensity to attend school were race and income." While she comments that the findings with respect to race, blacks attended on average three more days, may have been related to the integration taking place during the time of the study, "socioeconomic differentials are ubiquitous."

As was the case with early school leavers, there has been little systematic research on the relationship between absenteeism and school characteristics. Stallings (1976), in a study of Follow-Through students, found that absences in first and third grades were related to school environment and classroom processes. "Children were absent more frequently...in classrooms where they worked in large groups more often and where adults used direct questions in academic work and frequent critical feedback." This suggests that, at least for young children, classroom characteristics, including the size of learning groups and the affective milieu, may be an important factor in determining the amount of time individuals are willing to provide to schooling. Conversely, the level of student involvement in classroom activities may be a reliable predictor of absenteeism, poor achievement, and early school withdrawal. Heyns (1978) cites evidence that improved attendance has been noted when "an unstructured curriculum or innovative educational reform is introduced." In her Atlanta study the children who chose to attend summer school had attended school more regularly in the preceding year than did those who did not attend.

As the result of the current vogue for cross cultural comparisons, however inappropriate, a great deal of attention has been focused on the average

length of the school year. Unfortunately, there is no evidence that increasing the school year would have an effect on achievement great enough to warrant its cost. In all likelihood, the relationship between the number of days spent in school a year and achievement is mediated by a host of school, curricular, teacher, and student characteristics. There is little doubt, however, that additional learning time would benefit children from poor or poorly educated families, that is, precisely those children who tend to lose ground over the summer (Heyns, 1978).

> The most reasonable interpretation seems to be that the achievement of high-status children is not as dependent on the influence of schooling as is the achievement of the relatively disadvantaged. The rates of learning tend to remain fairly constant among children from affluent families, during both the summer and the school year. For less priviledged children, the impact of schooling is more determinate; test scores tend to decline in absolute magnitude.
>
> Heynes, 1978

The Length of the School Day

Historical data on the length of the school day apparently were rarely collected or reported. Mann (1928) and Reuter (1961) found differences of up to two full hours in samples of districts across the country. In 1973, Wiley and Harnischfeger found marked within district variation in Detroit. Quantifying schooling as the product of the number of days in the school year and the number of hours in the school day, they estimated that students' exposure to schooling in Detroit varied from 710 to 1150. "Typical pupils in some schools receive fifty percent more schooling than others."

While these authors found a relationship between exposure to schooling thus defined and student achievement, Karweit (1976) replicating the Wiley-Harnischfeger analysis with three separate data sets could not substantiate their findings and conclusions. While not dismissing the

possibility of a strong relationship between quantity of time and learning, Karweit suggests that the relationship may not be linear. She cites Husen (1972) in this respect. In a study of rural students in Norway who received half time instruction, he found that they scored only slightly below students provided full time instruction. Karweit recommends that more work be done on the cumulative effects of absences, as well as on the effect of ability and achievement on the quantity of time needed for mastery. One would also expect the relationship between scheduled time and achievement to be mediated by the actual quantity and quality of time alloted to teaching/learning by teachers, parents and students.

Teachers have, at least, partial control over the effective length of the school day since they determine, within bounds, the amount of class time allocated to instructional activities and the amount of time outside of class students spend on the subject area. A number of studies have indicated that roughly 12% to 15% of class time is routinely devoted to non-instructional activities. In a study of traditional third grades, Gump (1967) reported that teachers allocated, on average, 12% of class time to pupil transitions in and out of classrooms, Variations between and within classrooms were relatively low, 2.8% and 0.9%, respectively. Grannis (1978) estimated a 9-13% range in time devoted to what he calls "environmental maintenance." Garner (1978), in a study of fifth grade classes, found that an average of six out of a scheduled forty minutes or 15% of class time was diverted from the subject matter due to attendance taking, interruptions, and other non-instructional chores. In a sample of fifth grades in the Chicago SMSA, Thomas and Kemmerer (1983) found considerable differences in both scheduled time and between scheduled and alloted time. Scheduled time for mathematics ranged from 180

minutes a week to 276 minutes with a mean of 219 minutes, alloted time ranged from 143 to 274 minutes with a mean of 201 minutes. Differences in social studies were even greater. Anywhere from 90 to 185 minutes were scheduled but instructional time ranged from 72 to 276 minutes for an average of 167 minutes a week. Comparable differences were also found in the Beginning Teachers Evaluation Study (Fisher et al., 1976).

Little is known about teacher practices with respect to homework and even less about the extent to which teachers help students outside class. Garner (1978) found marked differences in the amount of homework assigned both across and within grade levels. As one might expect, teachers tended to assign more homework as students advanced in grade level. The data showed, however, that this increase is at least partially offset by differences in the amount of time scheduled for class. A fifth grade language arts teacher, for example, effectively extended the scheduled class period from 60 to 75 minutes by assigning homework that students completed, on average, in 15 minutes. A tenth grade teacher, on the other hand, had to assign 27 minutes of homework in order to extend class time to 62 minutes a day, since only 45 minutes were alloted for language arts in the school schedule.

Kemmerer (1980) in a study of fifth graders found that within class differences in the amount of time students provided to homework were related to mother's education and their own ability. Students of low and high ability tended to spend more time on homework, and to receive more parental help, than did students of middle ability. While it is axiomatic that slower students need more time to complete a task, high ability students apparently do extra work or tackle the assignment with greater depth.

Unfortunately, there is also a gap in the literature with respect to the effects of amounts or types of homework on student achievement. Kemmerer (1980) found that students who, on average, spent more time on mathematics homework also tended to be more able and more involved in mathematics class.

Just as teachers exercise some control over the length of the instructional day, so also do students. Even students with similar attendance records may differ markedly in the amount of time they provide to learning. Some students rarely skip classes, involve themselves in classroom tasks, complete homework assignments and voluntarily do more than is strictly required both inside school and out, while others do not. Studies have shown, for example, that some students "are actually engaged in learning 90% or more of available time" while others "are actually engaged in learning about 50% of the time" (Bloom, 1974). In an ethnographic study of a reportedly typical high school, Cusick (1972) observed that "if an average student spent an hour to one and a half hours a day involved in the subject matter that was a good day."

There is some evidence that individualized instruction (Anderson, 1973), highly complex peer group tasks (Kemmerer, 1980), the availability of resources (McDermott, 1977; Wells, 1974), and student ability (Kemmerer, 1980) are associated with high rates of involvement. Student involvement is, in turn, associated with achievement (Anderson, 1975; Bloom, 1972; Fisher et al., 1978).

Curriculum

During the late twenties and the thirties enrollments in secondary school were bolstered, not by social pressure but by the scarcity of jobs. This new generation of students, whose preferences would have placed them in the labor

market, found in the typical high school a classical curriculum with apparently little meaning for them (Tyler, 1968). Yet high school principals were reluctant to "suggest changes in the curriculum which they felt was largely dominated by the stated admissions requirements of prestige colleges" (Ibid.).

With time, however, and pressure from both liberals and conservatives, the curriculum expanded but by accretion rather than integration. The academic core, of many high schools, was not diluted in order to make it accessible or interesting to those with either poor primary educations or no taste for such a curriculum. It was, in fact, protected by the introduction of tracking. Thus the high schools, at least the larger ones, became at once both meritocratic and equalitarian. Offering something for everyone, they were increasingly characterized by "Diversification of curriculum, specialization of instruction and optional programs for students" (Cusick, 1981b).

Cusick (1981a), in a study of the curriculum in a sample of Michigan schools, found, for instance, that:

> ...students at one school had 111 courses from which to construct their education.... There was, of course, a standard curriculum at the school that required a student to take three years of English. But within the offerings of the English Department, there were 31 separate courses ranging from shakespeare and "Tradition and Revolt in English Literature" to "Troubleshooter" and "What's Happening," which are options for the marginally literate students.
>
> Cusick, 1981a

Cusick goes on to cite similar options in other subject areas. This range in courses is obviously a response to differences in prior achievement, as well as in individual preferences.

In 1980, about 27% of high school seniors in the nation had taken advanced English, 23% advanced math and 31% remedial English or math (National Center

for Education Statistics, 1983). Nationally, the division of seniors among academic, general, and vocational tracks was approximately 38%, 37.2% and 24.8%, respectively (Ibid.). There were, however, important differences among regions. In the Northeast, more than half of the high school seniors were enrolled in academic programs compared with approximately 33% in the South, 35% in the Midwest, and 36% in the West (Ibid.). These numbers would be little more than interesting statistics if: (1) the content of the courses, however labelled, was known; and (2) track "selection" and income, race and ability were unrelated.

On the primary level, it is becoming fairly well documented that course titles reveal relatively little about their content. Analyses of the Beginning Teachers Evaluation Study data revealed marked variation in the amount of time teachers spent on different subtopics. For example, teachers in four fifth grade language arts classes devoted 0.8%, 1%, 5%, and 6% of class time to creative writing (Berliner, 1979). Differences of the same magnitude were found in mathematics (Ibid.).

Thomas and Kemmerer (1983) found that the fifth grade social studies curriculum in the Chicago SMSA was all but unique to the school and sometimes to the classroom. Topics ranged from identification of the U.S. Presidents to anthropology and economics. American History, the most popular generic content area, varied in subtopics, overall approach and level of difficulty. Although most of the fifth graders were studying fractions and decimals in mathematics classes, some were simultaneously taking mini courses an calculus and computer programming. Moreover, these differences were generally related to the socioeconomic status of the school. Schools characterized by higher

than average parental education and occupation, tended to have more rigorous, as well as enriched program offerings.

Berliner (1979) has suggested, as have others, that one of the effects of such differences in the functional curriculum is a distortion of achievement scores. The differences between what is tested and what teachers emphasize in classrooms make cross classroom comparison of student achievement and teacher effectiveness problematical. By the same token, variation in the actual curriculum indicates that adding or changing curricular requirements may have little effect on what is taught or learned in school.

There is no reason to believe the relationship between track and course content and the average socioeconomic background of high school students varies from this pattern. Alexander and McDill's research (1976) indicates that social class affects track placement both directly and indirectly through its influence on student ability. The National Center for Education Statistics (1983) data is also suggestive in this regard. In 1980, 60% of the seniors enrolled in an academic track were from high socioeconomic (SES) backgrounds, 36.3% from middle, and 21.1% from low. Only 10.5% of the high SES seniors were in vocational programs. Ability was related to both SES and track. Those with the highest ability were concentrated in an academic track (72.3%), while 47.1% of the low ability were in a general track and 39% in a vocational program.

These figures raise the questions about the real choices students face in this seemingly endless smorgasbord of high school courses. On the one hand, poor students tend to have little real choice. The work in many of the courses would be too difficult. The program of the college bound students, on the other hand, is largely dictated by the quality of the college they aspire

to. Given these differences, the dilemma for policy makers is both how to raise standards or for whom to raise the standards. If the standards in all programs are raised, some low ability students may be pushed out of school. If only academic program standards are raised, then inequalities may be increased. A related issue is to what extent do differences in high school students' abilities reflect differences in elementary schooling. Improvement in the quality of primary schooling and the education of the parents may be one way to avoid the horns of this dilemma. The high school, though always the first to be scrutinized in moments of national distress, is difficult to change without altering the preparation received at lower levels and the incentives supplied by higher levels.

Teacher Quality

In the not so distant past, Atkins (1981) reports that the quality of prospective women teachers at midwestern state campuses rivaled that of women attending liberal arts colleges, including those "few in engineering." Moreover most of the women in programs leading to a teaching credential "were notably more able" than their male peers in the same programs.

By 1979 this picture had changed. "High school seniors who intended to teach averaged 392 on their SAT verbal scores compared with a score of 505 for those choosing English..." (Atkins, 1981). Comparing the National Teacher Examination (NTE) scores for the teachers in North Carolina in 1973 and 1980, Schlechty and Vance (1981) found that in 1980 the state employed 37% fewer high scoring white women (scores above 610) and only 4.6% fewer low scoring white women (scores below 610). The quality of black women remained fairly stable for the period, as did that of white males. Findings with respect to black males were considered unreliable because of small sample size. The

National Center for Education Statistics (1983) analyses of the intended fields of study of college bound seniors in 1972 and 1980 also show steeper declines in vocabulary, reading and math scores for the 1980 senior women intending to study education than for the men. These male/female differences may well be due to the fact that teaching is generally a first step in an administrative career for men, while few principalships and superintendencies are awarded women. A fact suggestive of active market discrimination.

While definition and measurement of teacher quality has been debated for years, neither issue has been resolved. Two basic approaches mark the literature: definition and measurement in relation to gains in student achievement or in terms of the personal characteristics of teachers.

Summers and Wolf (1974) in a study of student achievement in Philadelphia found scores on the National Teacher Exam and more or less schooling beyond the B.A. to be non-discriminatory in relation to achievement. Teacher experience, however, and the Gourman prestige rating of the teacher's college were associated with gains in learning but for specific categories of students. For instance, in elementary school more experienced teachers seemed to increase the rate at which high ability students mastered material. Relatively inexperienced teachers, however, did better with low achievers. In junior high the pattern was somewhat altered. Very experienced teachers again were beneficial for high achievers but all students, regardless of ability, benefited from teachers with ten or more years experience. Mathematics proved atypical in this regard. The authors explain this by pointing out that teachers with ten or more years of experience at the time of the study had not been trained in the new math.

With respect to the Gourman rating of the colleges from which the teachers received their B.A.'s, ratings of elementary teachers' colleges over 525 were associated with achievement. The association only partially held at the junior high level. At that level, high Gourman ratings were associated with social science and, particularly, high ability student achievement.

While these findings are important since they suggest that the relationship between educational resources and student achievement is not linear, it would be a mistake to impute causality to these associations (Thomas, 1977). Teachers with more experience may, for example, have a greater say in the quality of the students they teach. In addition, one must assume that teachers and districts with similar socioeconomic characteristics seek each other out in the labor market. It therefore would come as no surprise to find that teachers who score highly on almost any test tend to be concentrated in districts characterized by parents with high socioeconomic status, high achieving students, and above average expenditures.

Levin's work (1966) suggests that all districts would be better off if they simply selected teachers on the basis of verbal ability, since verbal ability has been shown to be associated with student achievement in a number of studies (see Hanushek, 1968, for example). Moreover, since salary scales tend to reward experience not ability, hiring more able but less experienced teachers is less costly. In a sense, this is a recommendation to all districts to emulate the wealthier districts' preferences. Today, the competition for high scoring entry level teachers may, however, be too fierce for poor districts characterized by relatively low salary and benefit packages.

For both educational and political reasons, it may be better to screen for ability at the entrance to programs leading to certification rather than at

later points when individuals have made considerable investments of time and money. Screening, of course, would have to be combined with increased incentives for the talented to enter teaching. The combination of high caliber entrants and competitive salaries would in and of itself increase teacher status. National or local awards by themselves are unlikely to achieve greater status recognition for teachers. Status, in this country, follows salary rather closely.

Conclusions

Although the research is far from conclusive, it suggests that:

(1) Reform will prove elusive without the active involvement of local administrators, teachers, parents and students;

(2) With respect to time, emphasis should be placed on the quantity of time provided by students to learning (attendance, homework where appropriate) and teachers to instruction. The latter, of course, entails administrative protection from interruptions, cancellations and excused student absences for competing activities. Special efforts need also be made to increase the time of remedial students and students from homes with few resources over and above the time provided to and by the average student;

(3) Assumptions should not be made about what is being taught and, therefore, what should be taught. Rather efforts to identify the functional curriclulum of schools are needed. Once this is done, the state could provide incentives for particular schools to alter their curriculum in ways desired by the state;

(4) Questions of teacher quality must be addressed jointly by colleges, who have some responsibility for the caliber of their graduates; teachers' unions, who like any professional groups must maintain membership standards; and the state, who will need to provide greater financial assistance if average and poor districts are to offer competitive salaries.

In addition, obviously more research is needed in these and related areas. This in itself argues in favor of a cautious approach to policy change. In

any event, there is no indication that dramatic changes would have the intended effects on student achievement. They might simply create greater uncertainty at the local level, which surely would be unproductive at this particular time.

APPENDIX A

RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY

... Key to Abbreviations ...

X = Where "X" appears in a particular box it denotes a paraphrase of the text of a specific recommendation contained in one or more of the five reports;

CRR = A recommendation advanced by the Commissioner of Education to the New York State Board of Regents;

NYL = A requirement Mandate by New York State Law.

RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY

RECOMMENDATIONS (By Level of Government)	COLLEGE BOARD	ECS TASK FORCE	NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION	PAIDEIA GROUP	TWENTIETH CENTURY FUND	STATUS OF NEW YORK STATE
FEDERAL						
1. Identify the national interest in education		Identifies the national interest	X		Identifies the national interest	NA
2. Increase federal share in the financing of schooling		"More funds from all sources... better use...of... resources"	Does not seem to add to current federal tasks		Implied	NA
3. Fully fund the categorical programs required by the federal government					X	NA
4. Support: the collection of information about ed. systems; the evaluation of federal programs; and basic research			X			NA
5. Continue support for special programs for the handicapped, and the poor			X		X	NA
6. Support programs for the talented					X	NA
7. Reformulate impact aid to assist districts with concentrations of immigrants or disadvantaged					X	NA

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RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY
(Page 2)

RECOMMENDATIONS (By Level of Government)	COLLEGE BOARD	ECS TASK FORCE	NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION	PAIDEIA GROUP	TWENTIETH CENTURY FUND	STATUS OF NEW YORK STATE
Federal - continued 8. Use federal bilingual funds to teach English to non-English speaking children					X	NA
9. Provide choice within the public school system by providing federal fellowships to remedial students for study at small public academies					X	NA
10. Encourage and Assist in the training of foreign language teachers and in the foreign language			Support "curriculum improvement" teacher training in areas of critical shortage or "key national needs		X	NA
11. Emphasize programs for the development of scientific literacy and provide funding for advanced training in science and math at the secondary level			See above		X	NA
12. Establish a national master teachers program that recognizes and rewards excellence					X	NA

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RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY
(Page 3)

RECOMMENDATIONS (By Level of Government)	COLLEGE BOARD	ECS TASK FORCE	NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION	PAIDEIA GROUP	TWENTIETH CENTURY FUND	STATUS OF NEW YORK STATE
STATE						
1. Increase state share in the financing of schooling		"States and local government have the chief responsibility for supporting the schools..." See Federal #2	Assigns the primary responsibility for financing the reforms to the state			N.Y.S. share currently 39%
2. Develop state plan for school improvement	Implied	X	Implied	Implied		The Commissioner has just submitted such a plan to the Regents
3. Create partnerships of business, government, labor and education leaders		X				Regents have been working with the Business Council on the relationships between business, industry and education
4. Assist districts in improving methods of recruitment and paying teachers and administrators		X	"Salaries for the teaching profession should be increased... increased...professional competitive...market sensitive...performance based"	"Recruiting for the profession is hampered by the average rate of pay		CRR: Recruit from business, industry, military and offer special training programs to provide certification
5. Improve teacher training		X	"Persons preparing to teach should be required to meet high education standards, to demonstrate an aptitude for teaching and to demonstrate competence in an academic discipline"			CRR: Strengthen regional organizations of colleges and school districts re: recruitment and preparation of personnel

RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY
(Page 4)

RECOMMENDATIONS (By Level of Government)	COLLEGE BOARD	ECS TASK FORCE	NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION	PAIDEIA GROUP	TWENTIETH CENTURY FUND	STATUS OF NEW YORK STATE
State - Continued 6. Provide grants and loans to attract students to the teaching profession, particularly in areas (subject areas) of shortage			X			The Regents Legislative proposals include provision of scholarships for prospective teachers of math and science (K-12)
7. Create "career ladders for teachers"		X	Implied by "merit pay" and the role sketched for master teachers in teacher preparation and supervision of new teachers Explicitly recommends the creation of "career ladders" as a task for local level			
8. Devise new ways to honor teachers		X				
9. Improve certification process for teachers and administrators		X		See State #5		CKK for teachers: Statewide Exam for certification; require one year internships for certification; required proficiency in a language other than English for certification

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RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY
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RECOMMENDATIONS (By Level of Government)	COLLEGE BOARD	ECS TASK FORCE	NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION	PAIDEIA GROUP	TWENTIETH CENTURY FUND	STATUS OF NEW YORK STATE
State - Continued 10. Examine teacher retention and dismissal procedures		X	"...tenure and retention decisions should be tied to an effective evaluation system."	"Principals should have the authority to hire and fire teachers..." "Principals should have a voice--preferably a controlling voice--in assignments and promotions..."		CRR: Districts submit to S.E.D. annual comprehensive assessment report (include teacher evaluation)
11. Identify skills students are expected to master	The report identifies such skills	X	Implied	Implied		State syllabi do this
12. Strengthen the curriculum and strengthen graduation requirements	Basic subjects English The Arts Math (incl. computer literacy Science Social Studies Foreign Language (Specifies necessary knowledge/skills not years of study)	X	Minimum requirements for H.S. graduation English - 4 yrs Math - 3 yrs Science - 3 yrs Social Studies- 3 yrs Computer Science- 1/2 yr Foreign Lang. - 2 yrs (College Bound)	Basic subjects K-12 Language (English & a 2nd language Literature, Fine Arts, Mathematics & Science, History Geography & Social Studies Auxiliary Subjects Physical Ed - K-12 Manual Arts - fewer than 12 yrs Career Ed. - grades 11 & 12		CRR: Mandate rather than recommend state K-12 syllabi; raise requirements for both Regents and local diplomas (see Appendix B) Relative to MLEE--Regents would require a 4th year social studies and a 3rd year foreign language
13. Improve equity in financing schooling		X				N.Y.S. has yet to answer issues raised in Levittown

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RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY
(Page 6)

RECOMMENDATIONS (By Level of Government)	COLLEGE BOARD	ECS TASK FORCE	NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION	PAIDEIA GROUP	TWENTIETH CENTURY FUND	STATUS OF NEW YORK STATE
State - Continued 14. Increase participation of women, minorities, handicapped in courses where they are underrepresented		X				
15. Assist districts in efforts to reduce absences and dropouts		X				S.E.D. Resource Allocation Program (RAP) provides assistance with such problems
16. Provide 2-3 years pre-school for for students from disadvantaged homes				X		CRK: Provide state schooling beginning with age 4
17. Increase the length of the school year		X	Increase by 20-40 days			National average: 180 days. N.Y.S.: 180 days. CRK: increase by 20 days (10 days for testing, 10 for inservice, 180 for instruction)
18. Increase the length of the school day		X Also use available time more efficiently	Increase by 1 hr a day			National average M.Y.L. 1-6, 5 hrs 7-12, 5-1/2 hrs CRK: increase instructional time within the current school day

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RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY
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RECOMMENDATIONS (By Level of Government)	COLLEGE BOARD	ECS TASK FORCE	NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION	PAIDEIA GROUP	TWENTIETH CENTURY FUND	STATUS OF NEW YORK STATE
LOCAL 1. Increase local financing		See State #1				
2. Develop district plan for school improvement	Implied	X	Implied	Implied		CRR: The annual Comprehensive Assessment Report would provide the basis for such a plan
3. Improve management techniques and academic leadership (principals		X	"...school boards must provide the [principals and superintencents] with the professional development and other support required to carry out their leadership role effectively"	The principal should be "first and foremost...the head teacher" and only after that an administrator of the non-teaching/ learning aspects of schooling		
4. Relate principals' pay to responsibilities and effectiveness		X				
5. Find ways to measure and reward teacher excellence		X	School boards, administrators and teachers should cooperate to develop "career" ladders for teachers	"Not only do we pay our teachers too little...we also fail...to give them the respect that the worth of their service to the community deserves"		
6. Examine teacher retention and dismissal procedures		See State #10	See State #10	See State #10		See State #10

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RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY
(Page 3)

RECOMMENDATIONS (By Level of Government)	COLLEGE BOARD	ECS TASK FORCE	NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION	PAIDEIA GROUP	TWENTIETH CENTURY FUND	STATUS OF NEW YORK STATE
Local - continued 7. Identify skills students are expected to master	See State #11	See State #11	See State #11	See State #11		See State #11
8. Identify and challenge the gifted; provide timely and appropriate remediation		X	"The most gifted...may need a curriculum... accelerated beyond the needs of other students of high ability. Similarly, educationally disadvantaged may require special curriculum materials, smaller classes...to help them master the material presented."	"Children...must be given special help to overcome those deficiencies" which stand in the way of achievement		CRk: Classroom teachers with appropriate assistance be given authority and responsibility for remediation
9. Reduce absenteeism and the number of dropouts		X				
10. Establish requirements for discipline homework and grades		X	"We recommend that schools...adopt more rigorous...standards... for academic performance and student conduct." "Students in high school should be assigned far more homework than is now the case."	"The principal should have the authority and be given the power to enforce standards of conduct..." "parental support of homework is needed...some of our school 'days' are over by noon and homework... has become the exception..."		CRR: Recommends that students be encouraged to spend additional time on homework

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RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY
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RECOMMENDATIONS (By Level of Government)	COLLEGE BOARD	ECS TASK FORCE	NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION	PAIDEIA GROUP	TWENTIETH CENTURY FUND	STATUS OF NEW YORK STATE
Local - continued 11. Base promotion on achievement	Implied	Implied	"Placement and the grouping of students should be guided by... academic progress, rather than a rigid adherence to age"	Implied		
12. Strengthen the curriculum and graduation requirements	See State #12	See State #12	See State #12	See State #12		See State #12
13. Provide foreign language instruction	Describes specific foreign language skills necessary for productive work in college		In both elementary and secondary school	In both elementary and secondary school		CRR: No mandated in K-6 but model curricula will be provided; mandatory proficiency exam at end of grade 9; see State #13
14. Fewer electives	Implied by the demands of mastering the "Basic Academic Competencies"	"Where essential and peripheral courses have invaded the curriculum, school systems must have the courage to put new emphasis on the core academic subjects."	Implied by the requirements of graduation	No electives in K-12 except choice of the foreign language to be studied		
15. Teach study skills	X		X	X		

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RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY
(Page 10)

RECOMMENDATIONS (By Level of Government)	COLLEGE BOARD	ECS TASK FORCE	NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION	PAIDEIA GROUP	TWENTIETH CENTURY FUND	STATUS OF NEW YORK STATE
Local - continued 16. Tracking vs no tracking			Fewer general track enrollments, more academic or vocational	No tracking K-12		
17. Test students	X		Nationwide (but not federal) systems of state and local tests administered at transition points between levels of schooling			N.Y.S. has a system of tests in which districts participate
18. Improve textbooks		X	Texts should be continuously upgraded; suited to specific categories of students and evaluated by boards and publishers			

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RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY
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RECOMMENDATIONS (By Level of Government)	COLLEGE BOARD	ECS TASK FORCE	NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION	PAIDEIA GROUP	TWENTIETH CENTURY FUND	STATUS OF NEW YORK STATE
Local - continued 19. Free teachers of administrative burdens		"Teachers must be freed from trivial demands and allowed to teach"		"Add to all this [inadequate salaries, poor working conditions] the many administrative, public relations, and quasi-menial duties that teachers are asked to perform... and it is easy to understand why our ed. system is not able to attract many of the ablest young into the teaching profession or to turn those who do join the ranks into adequate teachers."		
20. Make possible teaching by qualified non-school personnel in areas of critical shortage				X		
21. Make more effective use of the current school day	Implied in curriculum recommendations	X	X	X		

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RECOMMENDATIONS FOR THE IMPROVEMENT OF SCHOOL QUALITY
(Page 12)

RECOMMENDATIONS (By Level of Government)	COLLEGE BOARD	ECS TASK FORCE	NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION	PAIDEIA GROUP	TWENTIETH CENTURY FUND	STATUS OF NEW YORK STATE
POSTSECONDARY INSTITUTION 1. Raise admission standares		X	X			
2. Improve methods of training teachers (pre-service and in-servcice)		X	"The teacher-preparation curriculum is weighted heavily with courses in 'educational methods' at the expense of courses in subjects to be taught." See also State #5	Recommends direct preparation for teaching (classroom or on the job training) be postponed until after college is completed. See also State #5		
3. Improve texts			X			
4. Reduce grade inflation; raise graduation standards			X			

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APPENDIX B

Current Minimum Requirements for High School Graduation
Compared with the Proposed Requirements

Subject	State Minimum Required Units	Proposed Requirements	
		Regents Diploma	Local Diploma
A. Required			
English	4	4	4
Social Studies	3	4	4
Mathematics	1	3	2
Science	1	3	2
Health Education	1/2	1/2	1/2
Physical Education	4 Years No Units		
B. Major Sequence or Electives			
Foreign Language	---	**3	*0
Music / Visual Arts		1	1
Business	---		
Home Economics	---		
Industrial Arts	---		
Vocational Subjects	---		
Three-year Sequence in one program from Section B or Mahematics or Science	3		
Electives			
Regents Diploma	5-1/2		---
Local Diploma	3-1/2	---	5
Total Units Required			
Regents Diploma	18	18-1/2	---
Local Diploma	16	---	18-1/2

* or 3-6 units in Occupational Education
** Foreign Language Proficiency

Source: "Proposed Elementary and Secondary Goals and Actions," The Office of the Commissioner of Education, July 1983.

The National Reports:
Financing Improvements in Educational Quality

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In 1982-83, expenditures on public elementary and secondary education in New York State exceeded $11 billion. This is about one-tenth of the comparable national figure. Whether viewed at the state or national levels, the public investment is large. Yet, the spate of national reports as well as the Action Plan adopted by the New York Board of Regents strongly suggest that the public investment in schooling may be ineffective or insufficient. The reports have sparked debate and interest in the state and the nation, with discussions about the costs of financing the proposed changes contributing to the debate.

The purpose of this paper is to provide an assessment of the costs. The paper presents estimates of the additional costs required to implement a number of key recommendations in New York State. Comparable estimates are developed for the nation at large. A separate section considers two specific budgeting issues: (1) the effects of allowing for a gradual implementation of the proposed reforms; and (2) the impact of the reforms on costs within individual school districts.

To achieve improvements in educational quality, the reports propose changes with important budgetary consequences in three, overlapping areas. The first, upgrading teacher and staff quality, includes four specific suggestions: (1) raise teacher salaries to levels competitive with other labor market opportunities; (2) implement a merit pay structure; (3) provide larger public subsidies for those choosing to study, and practice, in education; and (4) require continuous academic training in content courses. In proposing the upgrading of curriculum requirements and skill mastery, several reports suggest a need to direct resources into supporting new and stronger curriculum requirements. Finally, to increase the quantity of

schooling, proposals for lengthening the school year have been advanced. Not all of these recommendations have been advanced in New York State, nor do these proposals encompass all of the Regent's Action Plan.

This paper provides no thorough evaluation of whether the proposals will be effective in achieving their aims. First, it is just not clear whether the various monetary incentives will encourage adequate numbers of talented individuals to enter or remain in teaching (or of current teachers to upgrade their skills). Even accepting that these proposals would strengthen the quality of the staff, the rigor of the curriculum, and the depth and extent of the learning experience for elementary and secondary students, the effects of the initiatives on what students actually learn remains a hotly debated, controversial question without a compelling answer (see Kemmerer in this volume).

I. THE COSTS

As summarized in Table 1, an estimated $2.2 to $2.4 billion would be required to fully implement proposals for improvement in education in New York State. The comparable figure at the national level is $24.0 to $26.0 billion. These figures are necessarily tentative, and should be regarded as "order of magnitude" estimates of the costs of implementing the specific proposals. Moreover, the calculations provide estimates of proposals generating recurring experditures as well as changes imposing essentially "one-time" costs. As an example of the latter, the proposal calling for upgrading the curriculum through the option of retraining existing teachers

would end within three years. Finally, the estimates refer to the costs of proposals when fully phased in (about which more will be said in Section II).

A more detailed discussion of each proposal is presented below.

Upgrade Teacher Quality

A subset of the reports' recommendations focus on improving the quality of classroom teachers. In effect, these proposals represent attempts to attract talented individuals into teaching, to encourage talented teachers to remain in the classroom, or to increase the skills and performance of the existing staff. Thus, the proposals work on altering the demand for and supply of more highly skilled teachers.

Raise salaries to a level competitive with other employment opportunities

Casual evidence continues to accumulate on the extent to which salaries for teachers lag behind earnings in other occupations for workers of similar sex, education, and work experience. Starting salaries for teachers in New York State range from $10,000 to $17,000, with the average minimum Step 1 salary at about $13,000. According to various placement surveys, starting salaries in other occupations average about $17,000 (Feistritzer 1983a, Table 10; Grant and Eiden 1982, Table 166). When adjusted for the differences in employment term (10 month for teachers versus 12 month for those employed in other occupations), the difference diminishes but does not disappear. Further, average salaries for teachers tend to rise less rapidly with length of employment than do earnings in other professions, thus widening a persistent salary difference over the working life. Therefore, initially and

over time, a teacher will earn less than his/her similarly educated peer in other professions (McMahon and Wagner 1981, 1982).

Several of the reports call directly for higher teacher salaries as an incentive for more highly talented students to choose education as a major and a profession. Higher salaries might induce capable teachers who have left the profession to return to the classroom. Moreover, currently employed teachers might improve their performance, perhaps as a result of greater motivation fueled by an improved sense of worth or because they no longer need to hold down second jobs to make ends meet.

Will salary supplements achieve these results? That actual and expected salary levels influence choices among fields of study and employment seems evident. Several studies do suggest that students and workers are aware of and respond to salary differentials in arriving at schooling and employment decisions (see McMahon and Wagner 1981, 1982; Scott 1982; and Freeman 1976; among others). In a recent survey of teachers, "salary" was the third most commonly cited negative effect (out of 15 items) on morale. Among teachers in the Northeast, salary was the fifth most commonly cited negative effect (Dearman and Plisko 1982, Table 3.8).

What we don't know is the size of the supplement required to achieve the desired quality results.[1] A simple comparison of average salaries in other occupations, weighted to reflect the educational attainment and sex attributes of those in the teaching professions, would suggest a 15 to 20 percent differential in salary currently exists. Given differences in the time shape of earnings and some non-monetary benefits highly valued by those in the teaching profession, a salary increase of this size would probably be sufficient to induce the required number of capable, talented individuals to

enter or remain in teaching.[2] As developed in Table A-1 and presented in Table 1, a somewhat more modest salary (and related fringe benefits) increase of 11 percent (approximately one month's salary) would require an additional $550 million for New York State. Nationally, the price tag for this proposal comes to $5.9 billion.[3] Neither estimate includes the impact on salaries at private schools.

Implement "Tennessee Plan" for merit pay

The reports uniformly recommend changes in the pay structure for teachers, with salary and compensation based on measured competency and performance rather than years of experience and educational attainment. Specific proposals for merit pay have surfaced in a number of states and in the national reports. One of the proposals receiving great interest is the "Tennessee Master Teacher Plan."

> The program sets up four career stages for teachers: apprentice teacher, professional teacher, senior teacher, and master teacher. The state certification commission will issue teaching certificates for each of these four levels: a three-year, non-renewable certificate for an apprentice teacher and five-year, renewable certificates for professional, senior and master teachers. (Parish, 1983)

Movement from one career stage to another is governed by years of experience and an evaluation by a Master Teacher Certification Board. When certified as professional teacher, the state would supplement current salaries by 5 percent. A senior teacher would receive a 10 percent salary supplement, plus another 10 percent if he/she agreed to accept an 11-month contract. A master teacher would receive an annual supplement of 15 percent, plus an extra 10 percent for accepting an 11-month contract and another 10 percent for agreeing to a 12-month contract. The supplements would be offered on top of a

20 percent increase in base pay for all teachers. There are no limits in the plan on the number qualifying as professional teachers. However, the state would pay senior and master teacher supplements for 25% and 15%, respectively, of a school's staff.

The costs of implementing a more modest merit pay plan are presented in Table 1. If the merit pay increments were offered on top of a general 11 percent increase in salaries, the total costs--base pay and merit pay--come to an estimated $1.0 billion to $1.3 billion in New York State alone. The merit pay portion of the proposal would tap the New York State treasury for an estimated $430 to $785 million. As detailed in Table A-2, these figures cover the range of program costs when no teachers accept an extended contract to the costs when all eligible senior and master teachers opt for the extended contracts. An additional $1 million in program costs for carrying out the required evaluations would also be necessary.

Provide loans with a cancellation feature for students who become teachers

One other method to attract high quality studerts into teaching is by reducing the "net price"--costs of attendance less grant aid--of a college degree in education below the comparable "net price" in other fields of study. This price reduction can be effected in several ways (diffential tuition, direct cash grants, subsidized loans).[4] However, the most targetted method to achieve the result is through a program of student loans with a clause that cancels the loan obligation if a graduate enters, and practices in, the teaching profession. Students who borrowed in the program and selected employment in another area would be required to repay the loan, with accumulated interest. Programs with a similar provision have been

employed in the past, including the student assistance portion of the National Defense Education Act (1958) and the Comprehensive Health Manpower Act (1971).

Will such a program be effective in attracting talented students into education? The evidence from the experience in these programs suggests the incentive effects are likely to be quite modest. The 1958 Act (and subsequent legislation) provided cancellations for those entering the teaching profession (in selected geographic areas or fields). Hartman (1971) argues that institutions might well have "steered" NDSL funds to students who would otherwise have enrolled in education.[5] Even assuming new, talented individuals might choose the education profession as a result of the cancellation feature, the numbers are likely to be quite small. The monetary incentive implied in the loan forgiveness provision is modest, representing perhaps 2 to 3 percent of a starting teacher's salary over a relatively short repayment term (Hartman 1971). It should not be surprising, as Ramsden (1977) points out, that barely 3 percent of NDSL borrowers in the early 1970's indicated the cancellation feature had affected their career choices.[6]

The more recent proposals, however, offer larger incentives. In New York, Governor Cuomo's 1984-85 Executive Budget recommends a loan program which would provide up to $4,000 each year for prospective teachers and would forgive $1,000 of the loan balance for each year of teaching after graduation.[7] Assuming that New York State fully funded this program and that all students participated, the net outlays (with all transactions on budget) would range from $30 to $65 million. For the nation, the capital costs of such a program would fall between $375 and $750 million. The calculations are detailed in Table A-3.

Require and pay for six credit hours of advanced coursework

Most licensed professions (eg., health, law) are moving toward competency-based continuing professional education requirements by specifying the content as well as quantity of recurring education and training. In contrast, teachers are rewarded by fulfulling continuing education credit hour requirements, with few restrictions on course content or local school district needs. Most of the reports consider improvements in the in-service continuing academic training of teachers as a vital and necessary means of maintaining and upgrading the quality of the existing staff.

Few of the reports actually spell out a specific program for improving the use and value of in-service continuing academic training. The variant developed here calls for a required six credit hours of coursework per year in the field of certification. This requirement would apply to all teachers, even those with permanent certification.[8] Given the rigid content and mandatory participation requirements, the state (through local school districts) might be expected to pay for the added coursework.[9]

If implemented, the added in-service continuing educational requirement would cost about $100 million in New York State.[10] The calculations and assumptions used to generate the estimate are detailed in Table A-4; again, the cost estimates exclude any impact on private schools.

Upgrade Curriculum

Recruit or retrain teachers to cover added course requirements

All of the reports speak to the need for stronger curriculum and graduation requirements. At the secondary level, these recommendations take the form of more (and more rigorous) courses in English, mathematics, science,

computer science, and foreign languages. Based on course-taking data developed from a 1980 national survey of high school seniors, graduating students lag behind the recommendations set forth in most of the key course areas. However, those from New York State have more nearly met the stronger curriculum requirements.

The state could choose among at least three alternative ways to direct resources into the expanding areas. First, under Option A, an estimated 3,000 new teachers might be recruited at a recurring cost of $95 million. Over time, as retirements led to a decrease in teachers in fields not emphasized in the new curriculum, the added costs estimated here would shrink (in real terms).

Option B offers "one-time" expenditures spread over three years. If sufficient numbers of capable, interested teachers could be "retrained" into the fields with increased demand, the annual costs in New York State would come to $50 million for each of three years (Table 1). As developed in Table A-5, these calculations assume a teacher could be certified in a new field with 45 credit hours of instruction over three years. During this period, the teacher undergoing "retraining" would be teaching half-time, while receiving full pay. The remaining half-time teaching load would be covered by substitute instructors.

Third, Option C would permit teachers currently qualified and teaching in the desired subject area to teach one extra class. The state (or school district) would, in effect, "buy back" a preparation period from the teacher in exchange for the added class. Assuming a $4,500 pay supplement for teachers participating in the program, the "buy back" would cost the state an estimated $90 million annually, with costs declining over time in real terms

as newly hired teachers cover courses in the subject areas with upgraded requirements. The success of this approach depends upon the current availability and distribution of qualified teachers in the state (and nation), their willingness to participate in the program, and the consent of the various teacher unions.

Note that none of the options includes the estimated costs of potential equipment and capital costs, such as classroom computers or laboratory facilities, required in the new curriculum.[11]

Increase the Quantity of Schooling

Increase the length of the school year

Several reports, and the Commissioner, have advanced proposals for increasing the amount of time elementary and secondary students spend in school. The proposals range from 2 to 3 years of pre-school for students from disadvantaged backgrounds and full-day kindergarten to lengthening the school day and lengthening the school year. The straightforward increase in the school year, from the average 180 days to a longer, 200-day school year, would cost an estimated $35 million in New York State alone. The national costs would amount to almost $10 billion (see Table A-6).[12]

II. BUDGETING ISSUES AND ALTERNATIVES

The cost estimates just presented assume full, immediate implementation of the selected recommendations and the resulting budget impact at the state (and national) level. While providing useful "order of magnitude" estimates of widely-discussed proposals for change, this approach is flawed because it

fails to recognize that most states will implement changes over a period of time. Moreover, the estimates of the state (or national) level implicitly (and incorrectly) assume that existing resources can be readily shifted among districts within the state.

The consequences of these assumptions are explored below.

Phased Implementation

Most specific plans for change call for a phased implementation. Allowing districts to gradually institute more rigorous standards eases the pressures that large, "one-time" changes place on the labor market, colleges, and schools. Rather than attempting to compete for additional qualified teachers to cover the required subject areas, school districts can meet part of the new teacher requirements through regularly scheduled new hires. Importantly, the institutions providing teacher training would also be able to more efficiently respond to the demands of current and prospective teachers. In addition, the annual costs of fully implementing increases in base pay, merit pay, teacher training or a longer school year will be less in the "out years" as school enrollments continue to decline later into this decade. In effect, the phased implementation passes the resulting budget savings on to the states and school districts.

Three particular program features and/or trends affect the time profile of costs as presented in Table 2. First, proposals can be gradually implemented over a period of three, five, or twelve years. Second, as enrollments decline, the numbers of teachers necessary to staff the schools should fall. The estimates in Table 2 incorporate a 2.5 percent annual decrease in K-12 enrollments, and 3.0 percent annual decrease in secondary school enrollments.

Third, new teacher hires can be selectively targetted on subject areas with increased requirements. The estimates in Table 2 presume half of the added course requirements will be met through regularly scheduled hires. The rates assume trends somewhat higher than currently anticipated in New York State. Therefore, the cost "savings" will, if anything, be overstated.

With a phased implementation, estimated costs for selected proposals in the base year range from 5 to 50 percent of what would be required to immediately implement them. The implied "savings" are substantial: across the array of proposals examined, the base year costs come to an estimated $700 million (compared to a $2.2 billion cost for the same set of options with immediate implementation). The comparison, however, is misleading. Under phased implementation, barely a third of the proposed changes would be in place in the base year. Thus, under phased implementation, fewer students will obtain the presumed higher quality education during the initial year. The implicit trade-off must be viewed in educational, as well as economic, terms.

The budgetary consequences of enrollment trends and using new hires to meet particular curriculum requirements can be seen in the third and subsequent years. Overall, the fifth year costs of the range of proposals come to an estimated $1.8 to $2.0 billion, or an overall difference of about 17 percent. Specifically, the reduction in the numbers of teachers required to serve the declining school-age population could result in a 10 percent reduction in the costs of a fully-implemented increase in teacher salaries by the fifth year ($495 million vs. $550 million, in constant dollars). Since the merit pay plan examined here is driven by base pay levels, the costs of the merit pay portion in the fifth year are about three-fourths of the plan's

costs with immediate implementation ($335 to $610 million vs. $430 to 786 million).

Finally, significant budget savings appear to be available over time with proposals intended to upgrade the curriculum. If regularly scheduled new hires are recruited to teach in subject areas with increased requirements, the fifth year cost of $50 million is about half of the $95 million cost estimated with immediate implementation. If the plan to "buy back" additional courses from current teachers could be implemented state-wide, the added costs of stiffer curriculum requirements fall from $90 million (immediate implementation) to a modest $10 million in the fifth year (but see below).

Costs Within School Districts

All of the proposed changes refer to improvements implemented across all districts in a state (or in the nation). However, districts vary widely in their current practices and results. Some districts make extensive use of computers in the classroom, offer comprehensive foreign language training, and enroll large numbers of their students in advanced mathematics, science, English, and social studies courses. Teacher salaries, training, and expertise may come close to the standards envisioned in various proposals for improving quality in education. Other districts fall far short of the proposed standards.

That these differences exist seems obvious. However, the financial requirements for overcoming the differences while raising standards everywhere are, at once, less clear and more difficult. In evaluating the costs of the National Commission on Excellence in Education's recommendations, the American Association of School Administrators (AASA) estimated a 20 percent increase in expenditures would be necessary. But, the Association discovered large

differences in the costs of implementing the recommendations across selected districts. The Montgomery County (MD) district would require an 11.3 percent increase while the Washoe County (Reno, NV) district would need a 36.4 percent increase.[13] Presumably, these differences reflect the underlying differences in the availability of qualified teachers in the required subject areas, current curriculum standards, and current salary schedules.

To what extent do the various planning and budgeting analyses take into account the differences in the availability of key resources across districts? Even if adequate numbers of qualified mathematics or foreign language teachers are available statewide or nationally, these teaching resources may not be available in every district. It is simply incorrect to assume that the supply of qualified current and potential teachers can be moved from districts that already meet the standards to districts that fall short. This type of re-allocation can only be achieved through various incentives (e.g., salary supplements, special cancellation provisions in the student loan program). And, such incentives will surely increase the costs of meeting standards state-wide.

The differences beg the question: Who is to pay for the changes? The districts falling far short of the proposed teacher and curriculum standards are not likely to have the capacity to finance the improvements from local sources. So, New York (and other states) will be asked to assist these districts the most.

Concluding Remarks

Under almost any set of proposals, the costs of implementing key changes in elementary and secondary education are sizeable. The roughly $2.2 billion

"price tag" for the changes examined above would represent about a 20 percent increase over current New York State expenditures on public elementary and secondary education.

Over time, the real costs of the recommendations might be expected to shrink. Some proposals, such as the "retraining" option for obtaining sufficient numbers of high quality teachers in areas of critical shortages, involve "one-time" expenditures. When coupled with a continuing, projected decline in the numbers of students, and the accompanying drop in the numbers of required teachers, all costs might be expected to fall.

However, several trends play against this backdrop. The demands for the education of youth from immigrant and minority groups--populations which have disproportionately large representations in New York State--will certainly grow. Further, the market for teachers will likely become increasingly competitive. As opportunities as well as desires for employment expand for females in traditionally male occupations, the exodus of both females and males from the teaching field will probably continue. The shrinking number of high school and college graduates implies potentially even greater competition for the pool of talented current and prospective teachers from the private sector and the military. And, even if sufficient numbers of qualified teachers can be recruited within New York State and the nation, they may require additional financial incentives to be attracted to the central city and rural school districts most in need of their services.

Moreover, additional costs might be incurred if the existing postsecondary education and training enterprise lacks the excess capacity to carry out the training and retraining of teachers in critical, high demand areas.

Clearly, the recommendations, if implemented, involve significant initial and recurring expenditures. Certainly, we should seek ways to creatively share the costs among the private sector, the school, and the family. But, while the size of the implied added public investment should encourage us to remain skeptical about which changes will truly achieve the desired results, costs alone should not discourage the search for ways to improve the intellectual and productive capacities of the citizens of New York State.

Notes

1. More technically, we require estimates of the elasticity of the supply of teachers of a given quality with respect to salary. The elasticities might be computed separately for the pools from which teachers of the desired quality might be drawn: new, talented entrants; former talented teachers; existing talented teachers; existing, less talented teachers. Freeman has provided some estimates of elasticity of the supply of college-trained manpower in specific fields with respect to salary, but his estimates do not touch on the quality question. See Freeman (1976) for a summary of results in a number of professions.

2. Both points require further elaboration. If starting salaries are more nearly comparable than future earnings between teaching and other professions, the starting salary differential understates the true difference in total potential earnings between the occupation groups. However, a comparison of mean earnings over the entire working life overstates the true difference, because it weights distant, future salaries equally with current salaries. To appropriately consider differences in the time shape of earnings, future salaries (differentials) must be discounted to their present value. This concept undergirds the calculation of rates of return to education, even by field. See, in particular, McMahon and Wagner (1982).

That non-monetary benefits might exert important influences on schooling and occupation choices has been recognized, but little studied. Indeed, one could argue that the more important rewards to teaching are non-monetary, including job mobility, intermittent labor force participation, and employment

term. For our purposes, the non-monetary job benefits confound attempts to arrive at the differential required for those not now in teaching to enter, or return to, the profession.

Without specifically examining this issue, Doyle (1983) implies that a salary increase of about 10 percent might be sufficient.

3. For teacher salaries alone, Feistritzer (1983b) estimates a $4.2 billion cost nationally and $409 million in added state expenditures.

4. For example, the Regent's Action Plan proposes 24 annual awards of four-year undergraduate scholarhips for prospective teachers of elementary and secondary mathematics and science. When fully phased in, the proposal would cost $240,000 (96 students receiving $2,500 each).

5. As evidence, Hartman (1971) observes that females comprised 45 percent of the NDSL borrowers in the early 1970's compared to a 36 percent share in the Guaranteed Loan Program. Given that a larger share of females than males chose education as a major and a career, these data suggest the institutions tried to maximize the "grant" incentives of NDSL when distributing loan funds.

6. And that cancellations represents less than one percent of the current NDSL volume.

7. The Governor's Budget asks for $2 million for the 1984-85 school year. This amount would fund 500 to 1,000 students in the first year. To maintain

the program at this level in subsequent years, future budgets would have to provide up to $8 million.

8. This proposal is an expanded revision of the part-time graduate fellowships to prepare mathematics and science teachers recommended in the Regent's Action Plan. With a projected 100 awards, the Regent's fellowship program tuition costs alone would come to an estimated $60,000. Incidental books and supplies, transportation, and meals costs--to the extent they are reimbursed--would amount to an additional $30,000.

The Action Plan includes several other proposals for upgrading the skills of newly and currently employed teachers. First, new teachers would have to complete a one-year internship to obtain certification. Assuming 4,000 new hires per year, each requiring about ten days of guidance and supervision from "mentor" teachers, this proposal would cost about $7 million. The Governor's 1984-85 Executive Budget requests $1.2 million to set up demonstration grants for a comparable "Mentor Teacher Program." Second, all teachers would be required to complete ten days of in-service training each year (up from the current three "Superintendent Conference" days). The training would be "approved" by the State Education Department as appropriate to serve particular local district needs. To fund compensation for the seven additional days, almost $200 million will be necessary. Apart from the salary and wage costs, some additional funds would be required to pay for the development and delivery of in-service training programs. The Governor's 1984-85 Executive Budget sets aside about $3.5 million for these purposes. Third, a cadre of 24 Regent's "teacher consultants" would be used to help

upgrade mathematics and science instruction. The Action Plan estimates a $720,000 annual cost.

9. Another variant of the proposal would take the funds earmarked for salary (and fringe benefit) increases to teachers completing in-service education, and use these funds to pay for the costs of the courses. To effectively retain the upgraded teachers, the program should reward those who become more productive, even if the school district (with public funds) fully pays for the education. The size of the salary supplement depends, in part, upon how much the newly-acquired skills improve the teacher's marketability outside of education. See Becker (1975) for a more complete discussion of this point.

10. The estimated costs refer only to out-of-pocket tuition and fee expenses. Particularly at public sector institutions, even part-time tuition rates might not cover the full public costs of providing the course at the margin (the balance would be met through general institutional subsidies). However, the "full" costs estimate is appropriate only if there is no excess capacity in the system. To the extent teachers may be absorbed into existing classes (and facilities), the appropriate measure of costs would include only the increased expenditures associated with the proposal. Expenditures for salaries and capital costs--obligated whether the teachers enroll or not--would be excluded. In this latter case the tuition may exceed the marginal costs of adopting the program. See Wagner (1983).

11. The New York State Regents estimate $66.5 to $87.2 million would be required to meet the computer and software requirements implied in the Action Plan.

12. Myers (1983) estimates the 11-month school year would costs $8.3 billion.

13. To raise salaries alone, AASA estimates a 35.1 percent increase in school spending would be necessary. But, here again, the effect of this standard would vary across the selected districts, from a 16.5 percent increase in the Roseville, MN schools to a 58.3 percent increase for West Point, MS teachers. See Education Week, October 12, 1983, p. 3.

Table 1
Summary of Costs of Recommendations for Improving School Quality

Recommendation	Estimated Added Annual Costs	
	New York State (millions of dollars)	National Total (millions of dollars)
Upgrade Teacher Quality		
Assist districts in improving methods of recruitment and paying teachers and administrators		
Raise salaries to compete with private sector opportunities	$ 550	$ 5,890
Create "career" ladders, merit pay, master teachers ("Tennessee Plan")		
Base Pay	550	5,890
Merit Pay	430 to 785	4,600 to 8,330
Administration	1	50
Provide grants and loans to attract students to the teaching profession		
Loans with cancellation feature	30 to 65	375 to 750
Improve teacher training (in-service)		
Require, and pay for, six credit credit hours of advanced coursework	100	1,285
Upgrade Curriculum		
Strengthen curriculum and strengthen graduation requirements		
Option A: Recruit new teachers to cover added course requirements	95	1,410
Option B: Retrain existing teachers to cover added course requirements	40	555
Option C: (over three years) "Buy Back" additional courses from current teachers	90	1,415
Increase Quantity of Schooling		
Increase the length of the school year		
Increase 20 days	935	9,750

Sources: Tables A-1 to A-6. Rounded to nearest $5 million.

Table A-1

Costs of Raising Teacher Salaries

	New York	National
1. Average teacher salary, 1982-83	$ 25,100	$ 20,531
2. Salary supplement: 11 percent (approximately a one-month contract extension)	2,761	2,258
3. Fringe benefits (variable portion: 22 percent of salaries)	607	497
4. Salary and fringe benefit increment per teacher	$ 3,368	$ 2,755
5. Number of teachers, 1982-83 (thousands)	163	2,138
6. Total costs of raising salaries (millions)	$ 549	$ 5,890

Sources of Data

Line 1: Feistritzer (1983b), p. 3.
Line 2: Author's estimate (see text).
Line 3: Author's estimate of benefits which vary with salary and term of employment, including social security, workman's compensation, retirement, vacation and sick days but excluding health insurance.
Line 4: Line 2 plus line 3.
Line 5: Feistritzer (1983b), p. 3. Data refer to FTE of instructional staff.
Line 6: Line 4 times line 5.

Table A-2

Costs of Implementing Merit Pay Plan
("Tennessee Master Teacher Proposal")

	New York	National
Panel 1: Apprentice Teacher Costs		
1. Average teacher salary, 1982-83	$ 15,654	$ 12,804
Base Pay Increment		
2. Base pay supplement: 11 percent (as per Tennessee Plan)	1,722	1,408
3. Fringe benefits (variable portion: 22 percent of salaries)	379	310
4. Salary and fringe benefit increment per teacher	2,101	1,718
5. Number of apprentice teachers, 1982-83 (thousands)	20	267
6. Base pay and fringe benefit increment for apprentice teachers (millions)	42	459
Panel 2: Professional Teacher Costs		
1. Average teacher salary, 1982-83	$ 24,795	$ 20,282
Base Pay Increment		
2. Base pay supplement: 11 percent (as per Tennessee Plan)	2,727	2,231
3. Fringe benefits (variable portion: 22 percent of salaries)	600	491
4. Salary and fringe benefit increment per teacher	3,327	2,722
5. Number of professional teachers, 1982-83 (thousands)	77	1,106
6. Base pay and fringe benefit increment for professional teachers (millions)	256	2,765

(table continues)

Table A-2 (continued)

		New York	National
	Panel 2: Professional Teacher Costs (continued)		
	Merit Pay Increment		
7.	Base pay, 1982-83	$ 27,522	$ 22,513
8.	Merit pay supplement: 5 percent (as per Tennessee Plan)	1,376	1,126
9.	Fringe benefits (variable portion: 22 percent of salaries)	303	248
10.	Salary and fringe benefit increment per teacher	1,679	1,373
11.	Number of professional teachers, 1982-83 (thousands)	77	1,016
12.	Merit pay and fringe benefit increment for professional teachers (millions)	129	1,395
	Panel 3: Senior Teacher Costs		
1.	Average teacher salary, 1982-83	$ 27,600	$ 22,576
	Base Pay Increment		
2.	Base pay supplement: 11 percent (as per Tennessee Plan)	3,036	2,483
3.	Fringe benefits (variable portion: 22 percent of salaries)	668	546
4.	Salary and fringe benefit increment per teacher	3,704	3,030
5.	Number of senior teachers, 1982-83 (thousands)	41	534
6.	Base pay and fringe benefit increment for senior teachers (millions)	152	1,618

(table continues)

Table A-2 (continued)

Panel 3: Senior Teacher Costs (continued)

		New York	National
Merit Pay Increment			
7.	Base pay, 1982-83	30,636	25,059
--- LOW ---			
8a.	Merit pay supplement: 10 percent (as per Tennessee Plan)	3,034	2,506
9a.	Fringe benefits (variable portion: 22 percent of salaries)	674	551
10a.	Salary and fringe benefit increment per teacher	3,738	3,057
--- HIGH ---			
8b.	Merit pay supplement: 20 percent (includes 10 percent supplement for teachers accepting an 11 month contract	6,127	5,012
9b.	Fringe benefits (variable portion: 22 percent of salaries)	1,348	1,102
10b.	Salary and fringe benefit increment per teacher	7,475	6,114
11.	Number of senior teachers, 1982-83 (thousands)	41	534
12a.	"Low" merit pay and fringe benefit increment for senior teachers (millions0)	153	1,632
12b.	"High" merit pay and fringe benefit increment for senior teachers (millions)	306	3,165

Panel 4: Master Teacher Costs

1.	Average teacher salary, 1982-83	$ 29,488	$ 24,120
Base Pay Increment			
2.	Base pay supplement: 11 percent (as per Tennessee Plan)	3,244	2,653
3.	Fringe benefits (variable portion: 22 percent of salaries)	714	584

(table continues)

Table A-2 (continued)

		New York	National
	Panel 4: Master Teacher Costs (continued)		
4.	Salary and fringe benefit increment per teacher	3,957	3,237
5.	Number of senior teachers, 1982-83 (thousands)	25	321
6.	Base pay and fringe benefit increment for senior teachers (millions)	99	1,039
Merit Pay Increment			
7.	Base pay, 1982-83	32,732	26,773
--- LOW ---			
8a.	Merit pay supplement: 15 percent (as per Tennessee Plan)	4,910	4,016
9a.	Fringe benefits (variable portion: 22 percent of salaries)	1,080	884
10a.	Salary and fringe benefit increment per teacher	5,989	4,899
--- MIDDLE ---			
8b.	Merit pay supplement: 25 percent (includes 10 percent supplement for teachers accepting an 11 month contract	8,183	6,693
9b.	Fringe benefits (variable portion: 22 percent of salaries)	1,800	1,472
10b.	Salary and fringe benefit increment per teacher	9,983	8,166
--- HIGH ---			
8c.	Merit pay supplement: 35 percent (includes 20 percent supplement for teachers accepting an 12 month contract	11,562	9,370
9c.	Fringe benefits (variable portion: 22 percent of salaries)	2,520	2,062
10c.	Salary and fringe benefit increment per teacher	13,976	11,432

(table continues)

Table A-2 (continued)

		New York	National
	Panel 4: Master Teacher Costs (continued)		
11.	Number of senior teachers, 1982-83 (thousands)	41	534
12a.	"Low" merit pay and fringe benefit increment for senior teachers (millions0)	153	1,632
12b.	"High" merit pay and fringe benefit increment for senior teachers (millions)	306	3,165
	Total Costs of Implementing Merit Pay Plan		
13.	Base pay (millions)	$ 549	$ 5,881
14.	"Low" merit pay (millions) (no contract extended)	432	4,600
14b.	"High" merit pay (millions) (all contracts extended)	784	8,330
15.	Program administration (millions)	1	50

Sources of data:

Line 1: Author's estimate. Approximate average salary for the teachers within the identified career ladder groups, as implied by years of experience. Salary by years of experience taken from New York State Education Department (1983a), p. 14.
Line 2: Author's estimate. This is about half of the supplement proposed for Tennessee teachers.
Line 3: Author's estimate. See Table A-1.
Line 4: Line 2 plus line 3.
Line 5: National and New York State teacher estimates refer to FTE of instructional staff, from Feistritzer (1983b), p. 3. Numbers qualifying at each level reflect the actual percentages in the Tennessee Plan, see Parish (1983). For apprentice teachers, I assume the number (share) is about the same as the number with bachelor's degrees, but little additional coursework.
Line 6: Line 4 times line 5.
Line 7: Line 1 plus line 2.
Lines 8: Taken from Tennessee Plan. See Parish (1983).
Lines 9: Author's estimate. See Table A-1.
Lines 10: Lines 8 times lines 9.
Line 11: See line 5.

Table A-2 (continued)

Lines 12: Lines 10 times lines 11.
Line 13: Sum of lines 6, Panels 1 to 4.
Line 14a: Sum of lines 12a, Panels 2 to 4.
Line 14b: Sum of line 12a (Panel 2), line 12b (Panel 3), line 12c (Panel 4).
Line 15: Author's estimate.

Table A-3

Cost of Loan Program with Teacher Cancellation Feature

		New York	National
1.	Number of bachelor's degrees conferred, 1980-81 (thousands)	84	935
2.	Proportion qualified to teach	.10	.10
3.	Number qualified to teach (thousands)	8	94
4.	Proportion teaching full-time	.50	.50
5.	Number qualified, teaching full-time, and potentially with cancellable loans (thousands)	4	47
	Average amount advanced		
6a.	Low	$ 8,000	$ 8,000
6b.	High	$ 16,000	$ 16,000
	Total Costs of Program		
7a.	Low (millions)	$ 32	$ 376
7b.	High (millions)	$ 64	$ 752

Sources of Data

Line 1: Plisko (1983), Table 2.21.
Line 2: Author's estimate, based on extrapolation of data presented in Plisko (1983), Table 2.23. Proportions in 1978 and 1981 were .190 and .146, respectively.
Line 3: Line 1 times line 2.
Line 4: Author's estimate, based on data presented in Plisko (1983), Table 4.6. Proportions in 1978 and 1981 were .49 and .53 respectively. If the loan program attracts more students to programs leading to teacher qualifications, a smaller proportion of those with qualifications will be hired full-time.
Line 5: Line 3 times line 4.
Lines 6a and 6b: Author's estimates.
Line 7a: Line 5 times line 6a.
Line 7b: Line 5 times line 6b.

Table A-4

Costs of Requiring and Paying for Additional Coursework

	New York	National
1. Tuition and fees per credit hour	$ 100	$ 100
2. Course load requirement	6 credits	6 credits
3. Costs per year per teacher	$ 600	$ 600
4. Number of teachers, 1982-83 (thousands)	163	2,138
5. Total Costs of Requiring Added Coursework (millions)	$ 98	$ 1,283

Sources of Data

Line 1: Author's estimate. Represents approximate tuition and fees per credit hour for part-time students at SUNY institutions.
Line 2: Author's estimate. line 3: line 1 times line 2.
Line 4: Feistritzer (1983b), p. 3. Data refer to FTE of instructional staff.
Line 5: Line 3 times line 4.

Table A-5

Costs of Strengthening Curriculum

	New York	National
1. Public high school graduates, 1981-82 (thousands)	198	2,757
English requirements (proposed 4 years)		
2. Number requiring one year (thousands)	-	327
(percent)	-	(12)
Social studies requirements (proposed 4 years)		
3a. Number requiring one year (thousands)	60	1,062
(percent)	(30)	(39)
3b. Number requiring two years (thousands)		327
(percent)		(12)
Math requirements (proposed 3 years)		
4a. Number requiring one year (thousands)	36	708
(percent)	(18)	(26)
4b. Number requiring two years (thousands)	12	191
(percent)	(6)	(7)
Science requirements (proposed 3 years)		
5a. Number requiring one year (thousands)	40	1,006
(percent)	(20)	(37)
5b. Number requiring two years (thousands)	22	272
(percent)	(11)	(10)
Computer Science requirements (proposed one-half year)		
6a. Number requiring (thousands)	99	1,362
(percent)	(50)	(50)

(table continues)

Table A-5 (continued)

		New York	National
Foreign Language requirements (proposed 3 years for college-bound)			
7a.	Number requiring one year (thousands)	111	1,090
	(percent)	(56)	(40)
8.	Total student years required (thousands)	365	6,456
9.	Total courses, all subjects (thousands)	16	258
10.	Number of teachers required (thousands)	3	52
Option A: Take on Additional Teachers			
11.	Average teacher compensation, 1982-83	$ 33,383	$ 27,306
12.	Total costs with additional teachers (millions)	$ 96	$ 1,410
Option B: Retrain or Shift Existing Staff (non-recurring)			
Course Costs			
13.	Tuition and fees per credit hour	$ 100	$ 100
14.	Course load requirements	45 credits	45 credits
15.	Costs per retrained teacher	$ 4,500	$ 4,500
16.	Total course costs (millions)	$ 14	$ 234
Substitute Teacher Costs			
17.	Average teacher compensation, 1982-83	$ 33,383	$ 27,306
18.	Number of "full time equivalent" substitutes required (thousands)	3	52
19.	Total substitute teacher costs (millions)	$ 100	$ 1,450
20	Total costs with retrained teachers (millions)	$ 114	$ 1,664
21.	Costs per year, each of three years (millions)	$ 38	$ 555

(table continues)

Table A-5 (continued)

		New York	National
Option C:	"Buy Back" Preparation Time from Qualified Teachers		
22.	"Buy Back" supplement per teacher	$ 4,500	$ 4,500
23.	Number of courses, all subjects (thousands)	16	258
24.	"Buy Back" pay supplement costs (millions	72	1,161
25.	Fringe Benefits (variable portion: 22 percent of salaries)	16	255

Sources of Data

Line 1: Price (1983), Table 1.
Lines 2, 3a, and 3b: Estimated from Peng, Fetters, and Kolstad (1981), Tables 2 and 5. Percentages shown here refer to course completions since the 10th grade. I assume each group has completed one additional year of study in the subject since the 9th grade. New York percentages taken from distribution of courses for Northeast region.
Lines 4a, 4b, 5a, 5b: Estimated from New York State Education Department (1982), Tables 3A and 3B. Percentages shown here refer to course completion since the 9th grade. I assume each group has completed one additional year of study in the subject since the 9th grade.
Line 6a: Author's estimate.
Line 7a: Author's estimate. About 20 percent of college-bound high school graduates complete 3 or more years of foreign language study. See Coleman, Hoffer, and Kilgore (1982), Table 5.1.4. Percent of graduates affected is further reduced to reflect college-bound population (70 percent in New York, 50 percent nationally).
Line 8: Sum of lines 2, 3a, 4a, 5a and 7 plus 2 times lines 3b 4b and 5b plus one-half of line 6.
Line 9: Line 8 divided by assumed class size of 23. See Feistritzer (1983) Table 2.
Line 10: Divide line 9 by an average courseload of 5. This assumes no excess capacity in the system.
Line 11: Feistritzer (1983b), p. 3. plus an estimated 33 percent in fringe benefits.
Line 12: Line 10 times line 11.
Line 13: Author's estimate. Represents approximate tuition and fees per credit hour for part-time students at SUNY institutions.
Line 14: Author's estimate. I assume each teacher would require complete coursework in the area outside his/her certification.

(table continues)

Table A-5 (continued)

Line 15: Line 13 times line 14.
Line 16: Line 10 times line 15.
Line 17: See line 11.
Line 18: Author's estimate. I assume that a substitute instructor will cover a half-time course load in each of three years for every teacher in "retraining."
Line 19: Line 17 times line 18.
Line 20: line 16 plus line 19.
Line 21: Divide line 16 by 3. I assume that the retraining costs are spread over three years.
Line 22: Author's estimate.
Line 23: See line 9.
Line 24: Line 22 times line 23.
Line 25. Author's estimate. See Table A-1.
Line 26. Line 24 plus line 25.

Table A-6

Costs of Lengthening School Year

	New York	National
1. Current variable expenditures on public elementary and secondary schooling, 1981-82 (millions)	$ 8,488	$ 88,607
2. Total costs of additional 20 days (millions)	$ 934	$ 9,747

Sources of data

Line 1: Grant and Eiden (1982), Table 68.
Line 2: Author's estimate. 20 days represents an 11 percent increase in the number of days currently scheduled. I assume that all variable costs will increase proportionately.

Table A-7

Costs of Recommendations for Improving School Quality
Under a Phased Implementation
(all estimates in constant dollars)

		Base Year	Year 2	Year 3	Year 4	Year 5
	Panel 1: Raise Teachers' Salaries					
1.	Salary and fringe benefit increment per teacher	$1,378	$2,449	$3,368	$3,363	$3,368
2.	Teacher requirements (thousands)	163	158.9	155.0	151.1	147.3
3.	Total costs of raising salaries (millions)	$ 225	$ 389	$ 522	$ 509	$ 496
	Panel 2: Merit Pay Plan					
4.	Base pay and fringe benefit (millions)	$ 225	$ 389	$ 522	$ 509	$ 496
5a.	"Low" merit pay and fringe benefit increment per teacher	$ 361	$1,285	$2,650	$2,650	$2,650
5b.	"High" merit pay and fringe benefit increment per teacher	$ 656	$2,332	$4,810	$4,810	$4,810
6.	Number of teachers receiving merit pay (thousands)	48	93	135	131	127
7a.	"Low" merit pay increment (millions) (no contracts extended)	$ 17	$ 119	$ 358	$ 347	$ 337
7b.	"High" merit pay increment (millions) (all contracts extended)	$ 31	$ 216	$ 649	$ 630	$ 610
8a.	"Low" merit pay costs (millions) (no contracts extended)	$ 243	$ 509	$ 881	$ 857	$ 834
8b.	"High merit pay costs (millions) (all contracts extended)	$ 257	$ 606	$1,172	$1,140	$1,109

(table continues)

Table A-7 (continued)

		Base Year	Year 2	Year 3	Year 4	Year 5
	Panel 3: Cancellable Loans					
9.	Number of students with loans subsequently cancelled (thousands)	4	8	12	16	16
10a.	"Low" loan program costs (millions)	$ 8	$ 16	$ 24	$ 32	$ 32
10b.	"High" loan program costs (millions)	$ 16	$ 32	$ 48	$ 64	$ 64
	Panel 4: Require Advanced Coursework					
11.	Number of teachers participating (thousands)	163	158.9	155.0	151.1	147.3
12.	Total costs of coursework	$ 98	$ 95	$ 93	$ 91	$ 88
	Panel 5: Strengthen Curriculum					
13.	Total addition to student years in required subjects (thousands)	365	354	343	332	323
14.	Total courses, all subjects (thousands)	15.8	15.4	14.9	14.5	14.0
15.	Additional teachers in required subject areas (thousands)	1.1	2.1	3.0	2.9	2.8
16.	Cumulative new lines available in required subject areas (thousands)	.5	1.0	1.5	2.0	2.5
17.	Net additional teachers in required subject areas (thousands)	.6	1.1	1.5	.9	.3

(table continues)

Table A-7 (continued)

	Base Year	Year 2	Year 3	Year 4	Year 5
Option A: Take on Additional teachers					
18. Total costs with additional teachers (millions)	$ 20	$ 37	$ 50	$ 50	$ 50
Option B: Retrain or Shift Existing Staff					
19. Total course costs (millions)	$ .9	$ 1.6	$ 2.2	$ 1.5	$ .8
20. Total substitute teacher costs	$ 20	$ 37	$ 50	$ 33	$ 17
21. Total costs with retrained teachers (millions)	$ 21	$ 39	$ 52	$ 34	$ 18
Option C: "Buy Back" Preparation Time					
22. Total added courses in required subjects (thousands)	5.2	10.3	14.9	14.5	14.0
23. Cumulative courses in required subjects taught by new hires (thousands)	2.5	5.0	7.5	10.0	12.5
24. Net added courses in required subject areas (thousands)	2.7	5.4	7.4	4.5	1.5
25. "Buy Back" increment	$5,490	$5,490	$5,490	$5,490	$5,490
26 Total "Buy Back" costs (millions	$ 15	$ 30	$ 41	$ 25	$ 8
Panel 6: Lengthen School Year					
27. Total costs of additional 20 days (millions)	$ 311	$ 605	$ 888	$ 866	$ 844

(Table continues)

Sources of Data

Line 1: Table A-1. Assumes that increment is phased in over three years, with 4.5 percent provided in the base year, 8 percent provided in the second year, and the full 11 percent increment provided in the third, and subsequent years.

Line 2: Feistritzer (1983b), p. 3, for base year number of teachers. Out-year estimates reflect an assumed 2.5 percent average annual decrease in the number of public K-12 students (and teacher requirements). New York State Education Department projections imply an average annual percentage decrease of about 2.2 percent. See New York State Education Department (1983b), Table 1.

Line 3: Line 1 times line 2.

Line 4: Line 3.

Lines 5a and 5b: Table A-2. Assumes that increment is phased in over three years, with one-third of the percentage increment provided in the base year, two-thirds of the percentage increment provided in year two, and the full increment provided in the third, and subsequent, years.

Line 6: Line 2. Assumes 20 thousand teachers ("apprentice" teachers) do not qualify for merit pay (see Table A-3). Also, assumes one-third of those qualifying receive merit pay in the base year, two-thirds of those qualifying receive merit pay in the second year, and all those qualifying receive merit pay in the third and subsequent years.

Lines 7a and 7b: Line 6 times lines 5a and 5b, respectively.

Lines 8a and 8b: Line 4 plus $1 million in administration costs plus lines 7a and 7b, respectively.

Line 9: Table A-3. Assumes that program is phased in over four years, one class at a time. The estimate represents the number of current students who will, upon graduation, satisfy cancellation requirements.

Lines 10a and 10b: Table A-3. Assumes each enrolled student takes a $2,000 ("Low") or $4,000 ("High") loan each year. The costs represent the "present value" of the funds advanced in the designated year.

Line 11: Line 2.

Line 12: Table A-4. Assumes $600 in tuition costs per teacher each year.

Line 13: Table A-5. Assumes 3 percent average annual decrease in numbers of secondary school students (and graduates), with attendant reduction in the numbers of required courses in subject areas. This is larger than the decrease in enrollments projected by New York State Education Department (1983b), Table 1.

Line 14: Line 13 divided by 23 students per class. See Table A-5.

(table continues)

Line 15: Line 14 divided by an assumed 5 courses per teacher. I assume, further, that the requirements are phased-in over three years (perhaps beginning with sophomores).

Line 16: Author's estimate. I assume 3,000 new hires each year, with 1,000 teaching at the secondary level. Of these, an assumed 500 are hired in the required subject areas.

Line 17: Line 15 minus line 16.

Line 18: Line 17 times average compensation per teacher ($33,383, from Table A-5). Since those additional teachers hired might be expected to stay on, I assume the costs for this option level out in year three.

Line 19: Line 17 times an estimated $1,500 per teacher in retraining each year. See Table A-5.

Line 20: Line 17 times average compensation per teacher ($33,383, from Table A-5).

Line 21: Line 19 plus line 20.

Line 22: Line 14. Assumes requirements are phased in over three years.

Line 23: Line 16. Assumes new hires teach 5 courses each.

Line 24: Line 22 minus line 23.

Line 25: Table A-5.

Line 26: Line 24 times line 25.

Line 27: Table A-6. Assumes all current operating expenditures are reduced in proportion to the projected enrollment decrease (about 2.5 percent per year). These reductions are achieved by reducing the number of teachers, closing buildings, consolidating bus routes, etc. I further assume the lengthened school year is phased in over three years.

Table 2

Costs of Phased Implementation of Recommendations for Improving School Quality in New York State

(all figures in constant dollars)

Recommendation	Immediate Implementation	Phased Implementation				
		Base Year	Year 2	Year 3	Year 4	Year 5
Upgrade Teacher Quality						
Salary Increase	$550	$225	$390	$520	$510	$495
Merit Pay Plan						
Base Pay	550	225	390	520	510	495
Merit Pay						
Low	430	15	120	360	345	335
High	785	30	215	650	630	610
Administration	1	1	1	1	1	1
Cancellable Loan Program						
Low	30	10	15	25	30	30
High	65	15	30	50	65	65
Training for Current Teachers	100	100	95	95	90	90
Upgrade Curriculum						
Option A: Recruit New Teachers	95	20	35	50	50	50
Option B: Retrain Existing Teachers	40*	20	40	50	35	20
Option C: "Buy Back" Additional Courses	90	15	30	40	25	10
Increase Quantity of Schooling						
Increase School Year 20 Days	935	310	605	890	865	845

*In each of three years.

Source of Data: Table A-7. Rounded to nearest $5 million.

ATTACHMENT 1

DRAFT

Cost Estimates for Components of the Proposed Action Plan To Improve Elementary and Secondary Education Results in New York

NOTE: THESE COST ESTIMATES ARE BASED ON THE PROPOSED ACTION PLAN, THE PROVISIONS OF WHICH ARE STILL UNDER EXTENSIVE REVIEW. THE ESTIMATES WILL BE REVISED AT THE TIME THAT THE BOARD OF REGENTS MAKES FINAL DETERMINATIONS ON THE ACTION PLAN.

Office for Elementary,
Secondary and Continuing Education

October 21, 1983

BR 6
(ATTACHMENT I)

INTRODUCTION

These estimates for various costs for implementing the Regents Action Plan have been developed by staff of the State Education Department. They are related to the document, "Proposed Action Plan to Improve Elementary and Secondary Education Results in New York." A careful review of the Proposed Action Plan is necessary to understand the complexity of the estimated costs in this document. Instructional requirements for elementary and secondary schools in New York State include proposed additions or revisions to course requirements, time, remedial work, content/objectives, examinations, educational personnel and procedures. These additions or revisions include more than 70 discrete actions affecting pupils in some way in grades K-6, K-8, K-12, 7-8, 7-12 and 9-12. For the purpose of displaying cost estimates in a comprehensible fashion, these 70 items have been clustered in the following categories: extended year, pre-kindergarten, computers, testing, curriculum development, monitoring/evaluation, training, improving teacher effectiveness (to serve pupils K-12) and teacher costs.

Estimates are displayed for five school years from 1984-85 to 1988-89 to depict phase-in time and also to present data that can be used for planning and developing options.

If the Regents Action Plan is to be fulfilled, personnel of various agencies and institutions will have to examine priorities, reallocate resources and organize i more effective and efficient ways. This has implications for how educational business is conducted at various levels. For pupils it means using time for learning more efficiently, both in and out of class; for teachers it means using more effective methodologies; for administrators it means using more effective management techniques; and for board members it means using certain information to set more effective policy.

Table I and page (9) presents cost estimates for the Regents Action Plan assuming a five-year "phase-in" of proposed activities. The appendices provide added detail and the assumptions for these estimates.

Extended School Year

Table I contains cost estimates for the extended school year which cover the following three major activities:

1. In-service
2. Transportation
3. Testing

The proposed addition states: "School Year - The school year will be extended 20 days to provide at least 10 days for staff in-service education, curriculum development, course planning and program evaluation, and 10 days for State examinations. This will result in approximately 180 days for instruction. School districts will be provided options for the scheduling of staff in-service days."

In completing estimates of costs of adding new services or new days, it must be pointed out that the present school calendar of 180 days includes 177 days of instruction and three Superintendent Conference Days. On these Conference Days there is no instruction, and there is no approval by the Education Department of the program conducted by the district for teachers on those days.

In the case of in-service education, estimates are made for having five days of in-service in 1984-85 and five additional days, for a total of 10 days in 1985-86. However, in 1984-85 the estimates assume that one of the present Superintendent Conference Days will be used as an approved in-service day, requiring an addition of only four new days to the calendar. In 1985-86, the estimates assume two present Superintendent Conference Days will be used as approved in-service days, requiring an addition of eight new days to the calendar to provide a total of 10 days for in-service each year.

While this approach does provide a way to institute 10 days of in-service each year immediately, it does not increase days of actual instruction. By 1987-88 and 1988-89, our estimates assume that the two Superintendent Conference Days being used for in-service will be converted to days of actual instruction and two additional days will be added to the calendar for in-service. This brings total number of days added to the calendar for in-service to 10 in 1988-89.

The cost estimates assume that there will be no new days added for testing in grades K-6. All necessary and required testing would be accomplished during the 180 days of instruction. Test days are added to grades 7-12 in the 1986-87 school year, and by the 1988-89 school year a full 10 days of testing will have been implemented. The basic assumption concerning transportation is that additional student transportation will not be necessary since students are not part of the in-service process. Students are an integral part of the testing component, and transportation costs increase as separate days for testing are added.

Pre-Kindergarten

Cost estimates for the support of the provision of educational programs for those four-year-olds whose parents wish them to attend school are depicted in Table I. Providing for early childhood education is a high priority for the Regents. The Regents have submitted a legislative proposal that would provide State assistance for attendance of four-year old children in pre-kindergarten programs. This proposal reflects the commitment of the Board to offer an opportunity for school at public expenditure at an earlier age than now provided. As the Head Start and experimental pre-kindergarten programs have demonstrated, a great change has occurred in early childhood education with the potential for excellent activities and the provision of more rigorous action skill introduced at earlier times. Much of what was formerly done in kindergarten is now part of pre-kindergarten. This shift will not affect all children but certainly makes a difference with respect to the pace at which the curriculum can be mastered by many children. No specific change in the formal years of compulsory schooling is proposed in

this plan, but it is important that any change in the required instructional program preserve a flexibility for acceleration of children who are capable of such pace. The Action Plan seeks to provide pre-kindergarten opportunities to 39% of the potential population by 1988-89.

Computers

Cost estimates of the support of the proposed addition to instructional requirements for elementary and secondary schools involving computers are depicted in Table I.

The proposed addition states: "Computers - Students will acquire skills in the use of computers as the technology is applied to various courses. Elementary and secondary education curriculum will be updated to incorporate computer literacy and computer technology into the appropriate subject matter areas. For example, word processing can be included with instruction on writing; problem solving will be included with instruction in mathematics or logic; and information search skills can be included in several subjects. The new math 7-8 curriculum will include an emphasis on computer literacy."

The proposed action targets funds to maximize technology's impact on the effectiveness of classroom instruction. Based on a careful review of the present situation and future trends, it is believed that the use of computer technology for drill and practice or instruction in computer programming will be overshadowed by the use of technology for higher-level skills. It is believed that the schools in New York State must focus on using the computer as a tool for learning for all students. The uses of computer software tools, much like the use of a pencil or a calculator, are appropriate for and should be integral to all subject areas in the future.

At the present time much of the computer hardware and software available in New York State is being used for drill and practice or programming. A much smaller percentage is being used as tools to support higher-level thinking and decision-making skills.

The proposed action attempts to focus funds on acquiring new technology as well as redirecting existing technology for supporting these higher-level skills. This means that state-of-the-art hardware and "tool" software must be made available to all students on a regular basis as an integral part of all subject areas. If regular is defined as at least one hour per week per student, approximately 91,000 computer devices (micros or terminals) are needed for all public school students (10,000 devices for nonpublic school students). Based on survey data from the spring of 1983, the number of computer devices available in public schools is estimated to be between 24,000 and 42,000 (based on an extrapolated estimate of those not responding to the survey). This means that between 49,000 and 67,000 additional devices are needed to meet the objective of an hour per week per student. Furthermore, this number assumes that existing devices will be capable of use without additional cost. Using a rough figure of $1,000 per device, the cost to reach

this minimal objective would be between $49,000,000 and $67,000,000 for the public schools and $2,500,000 to $5,200,000 for the non-public schools.

Therefore, to meet the objective with a phased-in orderly acquisition of new equipment, a need exists for expenditures of approximately $25 million per year.

It would be necessary for new hardware acquisitions to be approved in conjunction with the Regional Plans.

In the same way that textbooks are needed for curriculum, the proposed Action Plan accepts the critical importance of software for hardware. With an annual allowance of $5 per pupil, the estimated cost for software would be about $15 million a year for public and nonpublic school pupils.

Improving Components of Instructional Programs

Cost estimates for the support of improving components of the instructional programs are included in Table I. The following significant changes will be made to enhance the State program of testing.

Mathematics - The grades 3 and 6 PEP tests in mathematics will include questions about the computer and its use as reflected in the new curriculum.

Science and Social Studies - School districts and schools will conduct program evaluations in the 6th grade according to SED format and using SED tests. The program evaluations will be designed to measure effectiveness of school programs over the elementary grade levels and measure student progress in those skills where evaluation of student performance requires techniques other than written examinations. Emphasis will be placed on evaluating laboratory work, oral expression, critical thinking and problem solving skills.

Language Proficiency - A new proficiency examination will be established at the end of grade 9 in reading, writing, speaking and listening to one language other than English. Passing this examination will be a requirement for the high school diploma. Students passing a Regents foreign language examination are not required to pass the proficiency examination. Students identified as having handicapping conditions may be exempted from the foreign languge proficiency requirement, if the students' Individual Educational Program (IEP), as established by the Committee on the Handicapped (COH), states it is not appropriate.

Reading - Regents Competency Test in Reading is to be revised to raise the level of accomplishment required in relation to increase in secondary school textbook level of difficulty since initial establishment of test standard.

Science - A Regents Competency Test in Science usually to be taken at the end of grade 9 will be developed.

Three State Social Studies examinations will be required. A State Examination will be offered at the end of grade 8 to include the coursework in grades 7 and 8 in American and New York State History and Government. This examination will be used to assess the 7-8 grade program. A State examination will be required at the end of grade 10 to include the coursework in grades 9 and 10 in global studies. A State examination will be required at the end of grade 11 to include the coursework in grade 11 in American history.

Occupational Education - Each occupational education program shall have a State examination which measures specific occupational competencies as well as the application of occupational awareness, job readiness skills and life skills to the specific occupational area tested.

Regents Examinations - Regents diploma candidates must pass Regents examinations for three courses in mathematics, three courses in science, and the foreign language sequence.

The Education Department and Regents have strengthened the long established process for preparing statewide syllabi and curriculum materials for elementary and secondary school courses. The Department is reviewing all curricula--with the help of teachers and administrators--under a systematic plan providing for regular revision matched to priority statements.

Curriculum development activities of the State Education Department involve 22 proposals, 10 at the elementary level and 12 at the secondary. Most of these specify modification or development of curriculums for the basic subject matter areas--English/Language Arts, Mathematics, Science, Social Studies, Foreign Languages, Art and Music, Physical Education and Health. Two proposals call for the inclusion in all curriculum revisions of certain generic subgoals such as problem solving and the capacity to search for information while two others call for the inclusion of the use of computers and computer literacy where appropriate. A number of the proposals note that the curriculum development or modification called for is already under way. In such cases, there are usually no additional costs. New requirements such as foreign language proficiency by grade 9 and the fourth social studies unit for high school graduation do require new curriculum material with attendant development costs.

All occupational education curricula are in the process of being revised. All occupational education students will be required to take a program of instruction covering the topics of occupational awareness, job readiness, life skills and occupational preparation. In grade 11, occupational education programs will consist of required and selected modules in broad preparation for occupations (e.g., trade occupations, service occupations and information occupations). In grade 12, occupational education programs will consist of required and selected modules of specialized preparation for occupational clusters (e.g., office occupations and agricultural science and production). Technology will involve the study of technical systems including tools and machines and their relationship to the national and international economy, government and society.

The Department will develop the necessary coursework for schools to implement the proposed requirement in technology. For the Introduction to Careers requirement all students will have 1/2-year course per year with modules in life skills, occupational and career awareness, and job readiness. Introduction to Careers, together with requirements in Technology, will revise the existing practical arts courses, and will be taught in cooperation with a school's guidance program.

Monitoring, evaluation and training activities of the Department will require that each school district will prepare and present to the public an annual Comprehensive Assessment Report (CAR) on all subjects. The State will require that the data be presented in a format emphasizing course objectives, test performance trends, and student progress. School districts will be responsible for taking corrective action if trends are not satisfactory. If results are unacceptable in terms of State criteria over a three-year period, SED staff will be assigned to assist in developing corrective measures for the district. The Department will assist with in-service education to meet local needs identified through the Comprehensive Assessment Report.

Additional in-service training provided by the state should focus on efficient use of time, remedial work, use of state syllabi, computer literacy/technology, working with handicapped pupils, and interdisciplinary projects.

Improving Teacher Effectiveness

Estimated costs for improving teacher effectiveness are depicted in Table I.

A statewide examination for teacher certification will be implemented and satisfactory performance on tests of knowledge of English, social studies, mathematics, science, the arts and of pedagogical practice, and specialty examinations in subject areas will be required for teacher certification. Approximately 50 specialty examinations will be developed for teachers and administrators.

Legislative approval will be requested in Regents proposals for one-year internships to be required for State certification, internships and grants to prepare for mathematics and science teaching, and the designation of teaching as a licensed profession. A State Board for Teaching would be instituted with a professional discipline process incorporated.

Local assistance monies would cover partial subsidy of intern salaries and reimbursement to districts for a portion of mentors' time. State purpose monies would cover salaries and temporary service monies for State evaluators, regional coordinators, and central office staff, and training and orientation. Approximately 1,150 administrators and 3,000 teachers and pupil service personnel are newly employed in public schools each year.

Proposed legislation would establish four-year undergraduate scholarships for prospective teachers of elementary and secondary mathematics and science with an annual allowance of up to $2,500; two scholarships would be awarded each year in each of the 12 judicial districts of the State. Twenty-four scholarships would be added each year for a total of 96 scholarships in the fourth and subsequent years.

Part-time graduate fellowships (100) to prepare teachers of mathematics and science would be made available through proposed legislation. Proposed legislation would provide for the annual selection of 24 Regents consultants in mathematics and science, two from each of the 12 judicial districts of the State. Employing school districts will be reimbursed up to a maximum of $30,000 for costs relative to a consultant's service, e.g., substitutes during leave of absence, travel, and materials.

Implementation of the Regents proposal to require school districts to conduct annual professional performance reviews will require Department staff to review school district plans for professional performance review and help districts strengthen their local systems through technical assistance and on-site visits.

Teacher Costs

The department estimates additional staffing needs for local districts to implement the new foreign language proficiency requirement. It is estimated that most districts will have an additional cost related to hiring foreign language teachers to teach in grades 7 and 8, since, for the most part, foreign language teachers are not employed currently in these grades.

Districts will have the option to implement this requirement by different configurations and programs, but for the purposes of estimating costs, it has been assumed that most instruction in foreign language will take place in grades 7, 8 and 9. Estimates of teacher need are based on an assumed class size of 25 students. It is assumed that on average during the grades 7, 8 and 9 pupils will need the equivalent of 2 units of language study to reach required proficiency.

Calculations were based on projected student enrollments in 7th, 8th and 9th grades, except for school year 1985-86, when only 7th grade enrollments were taken into account. Bilingual enrollments were subtracted from the total enrollments in these grades, based on 1982-83 percentages of enrollments in bilingual programs.

The number of foreign language classes taught in 1982-83 in 7th and 8th grades was subtracted from the total needed to provide instruction in the school years from 1985-86 to 1988-89 to determine additional classes needed each year. This number was divided by 5 (sections per teacher) to determine total number of FTE teachers needed. Salary figures were based on $35,200 (1982-83 median salary for teachers of foreign language, plus 36% fringe).

	Additional Expenditures	Additional Teachers Needed
1984-85	None	--
1985-86	$32,200,000*	910*
1986-87	25,800,000 over 1985-86	740 over 1985-86

*Estimated for 7th grade students only. The first graduation class affected is 1991.

With the exception of additional foreign language teachers to meet the foreign language proficiency requirement, it is estimated that on a Statewide basis, there will not be additional costs for teachers due to the increased instructional requirements included in the Proposed Action Plan. There are many factors which will determine the actual number of teachers to be needed over the next decade. These factors must be considered in conjunction with the increased instructional requirements included in the Proposed Action Plan.

1. The Proposed Action Plan does not increase the instructional time in a school day. For grades 1-6, 5 hours will continue to be required in an instructional day; and for grades 7-12, 5-1/2 hours will continue to be required in an instructional day. Presently, 97.3% of the Regents Diploma candidates take between 18 and 22+ units (18 units presently required). Also, 46.9% of Local Diploma candidates take between 18 and 22+ units (16 units presently required). Since the new requirement for both the Regents and local diplomas will be 18-1/2 units and the instructional day will remain fixed, it is estimated that the existing number of teachers will be sufficient to meet the staff needs brought about by the increased instructional requirements. As the new course requirements are phased-in over the next five years, there will be gradual adjustments in the composition of the teaching force to reflect the new requirements.

2. For the 1983-84 school year, the Department projects a need for 68,360 secondary school teachers based upon actual enrollment. It is also known that the Statewide average teacher attrition rate is approximately 9%. Therefore in 1983-84 it can be estimated that 6,200 teachers will leave their jobs. In addition, the Department's estimate of the number of teachers in new assignments Statewide needed in 1984-85 to meet the instructional program requirements outlined in the Proposed Action Plan will be equal to or less than the projected number of teaching vacancies. School districts can therefore use the 6,200 teaching vacancies in 1983-84 to meet the new staffing needs in 1984-85 created by the Proposed Action Plan. In projecting estimated teacher vacancies for a five-year period due to attrition and increased staffing needs created by the Proposed Action Plan, secondary school teacher vacancies will be greater than new staffing neds for each of the five years. Of course, some districts, where the

teacher attrition rate is below the Statewide average, may experience some additional staffing costs.

3. Another factor which must be considered is that many secondary students are already taking more than the minimum number of required courses and in many cases are meeting the proposed new course requirements for some of the subjects. A 1980 survey of secondary school students in New York State produced the following results:

Social Studies*

62% of Regents students take 4 years
53% of general education students take 4 years
53% of vocational education students take 4 years

Mathematics*

92% of Regents students take 3 or more years
91% of general education students take 2 or more years
82% of vocational education students take 2 or more years

Science*

89% of Regents students take 3 or more years
86% of general education students take 2 or more years
75% of vocational education students take 2 or more years

4. Another important factor to consider is the projected enrollment decline of secondary education students over this decade. For example, the 7-12 public secondary school enrollment for 1982-83 is 1,322,000 students and for 1988-89 it is projected at 1,065,000. This is an enrollment reduction of 257,000 students or 19.4%. With declining enrollments there will be a need for fewer teachers. This will help lessen the burden to districts for additional staff created by the recommendations in the Proposed Action Plan.

Finally, it must be emphasized that these calculations are based on staffing needs to meet the minimum requirements included in this Proposed Action Plan. If school districts elect to go above the minimum requirements, additional staffing costs may result.

* High School and Beyond, A National Longitudinal Study for the 1980's; Report No. 1, A Description of High School Students in New York State and the Nation 1980. Albany, New York: The State Education Department, Information Center on Education, April 1982.

Conclusion

These proposals for changing instructional requirements for elementary and secondary education in New York will have a major impact on millions of children and a vast educational system. The cost estimates that are displayed in this document are just that - estimates of costs of comprehensive and interrelated proposals. The estimates are offered to provide assistance in discussion and decision making. The proposals deserve careful review, comment, and refining before they are made final. To provide an opportunity for this review, the Board of Regents and the State Education Department have scheduled a series of 10 Regional Conferences to be held throughout New York State in the fall of 1983.

Regents Action Plan
Table I
Increased Incremental Costs from the Previous Year (millions)

	1984-85	1985-86	1986-87	1987-88	1988-89	Additional Cost in the 1988-89 School Year as Compared with 1983-84 School Year Resulting from Implementation of the Regents Action Plan
Extended Year	$158.019	$158.019	$ 88.668	$114.526	$110.675	$629.907
Pre-Kindergarten	1.000	51.525	30.515	21.269	12.681	116.990
Computers						
a. Hardware	25.000	0	0	0	0	25.000
b. Software						
Public	12.236	-.232	-.191	-.174	-.159	11.480
Nonpublic	2.876	0	.001	.002	.003	2.882
Action Plan Implementation						
a. Testing	.092	.630	-.128	.072	0	.666
b. Curr. Dev.	.544	.673	.371	-.684	-.673	.231
c. Monitoring, Evaluation and Training	3.445	1.609	.205	.289	-.024	5.524
Improving Teacher Effectiveness	5.791	17.775	2.085	2.275	2.475	30.401
Foreign Language Teacher Costs	0	32.200	25.800	0	0	58.000
TOTAL	$209.003	$262.199	$147.326	$137.575	$124.978	$881.081

BEST COPY

COST ESTIMATES -- EXTENDED SCHOOL YEAR

ASSUMPTIONS

	SCHOOL YEAR				
	1984-85	1985-86	1986-87	1987-88	1988-89
Inservice	180 Days - Includes 1 Day InServ. 2 Supt. 180 +4 added InServ. 184 Total 5 Total InServ. 4 added InSer.(K-6 AND 7-12) 4 added InSer. BOCES	180 Days - Includes 2 Days InServ. 1 Supt. 180 +8 added InSer. 188 Total 10 Total InServ. 8 added InSer.(K-6 & 7-12) 8 added InSer. BOCES	180 Days - Includes 2 Days InServ. 1 Supt. 180 +8 added InServ. 188 Total 10 Days InServ. for ALL	180 Days - Includes 1 Day InServ. 1 Supt. 180 +9 added InServ. 189 Total	180 Days - Includes 1 Supt. Day 180 +10 added InServ. 190 Total
Testing			K-6 -0- Test Days 7-12 188 +4 Test Days 192 Starts Pd. 4 New Test Days 7-12	K-6 -0- Test Days 7-12 189 +7 Test Days 196 10 InSer. Days 9 Add. InSer. Days for K-6 & 7-12 Adds 1 InSer. Day for K-6 & 7-12 Add 7 new Test Days, 7-12	K-6 -0- Test Days 7-12 190 +10 Test Days 200 10 Add. InSer. Days K-6 & 7-12 (Adds 1 Final InSer. Day for K-6) Adds 10 New Test Days 7-12
Transportation	No new Trans. Exp.	No new Trans. Exp.	New Trans. Costs for 7-12 - Test Days	New Trans. Costs - 1 Day for K-6 & 7-12 Provides Trans. Cost - 7 Ad. Days for 7-12	New Trans. Cost - 1 Day for K-6 & 7-12 Provides Trans. Cost - 10 Ad. Days for 7-12

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COST ESTIMATES -- EXTENDED SCHOOL YEAR

	1984-85	1985-86	1986-87	1987-88	1988-89
Inservice	Dist. $149,439,000 (4 day BOCES 8,580,000 Cost) Total $158,019,000	Dist. $298,878,000 (8 day BOCES 17,160,000 Cost) Total $316,038,000	Dist. $298,878,000 (8 Day BOCES 17,160,000 Cost) Total $316,038,000	Dist. $336,163,000 (9 Day BOCES 19,305,000 Cost) Total $355,468,000	Dist. $373,597,000 (10 Day BOCES 21,450,000 Cost) Total $395,047,000
Testing	No Additional Testing Days	No Additional Testing Days	7 - 12 4 Additional Testing Days Dist. $ 73,708,000 BOCES 8,580,000 Total $ 82,288,000 No K-6 Testing Days	7 - 12 7 Additional Testing Days Dist. $135,989,000 BOCES 15,015,000 Total $151,004,000 No K-6 Testing Days	7 - 12 10 Additional Testing Days Dist. $194,270,000 BOCES 21,450,000 Total $215,720,000 No K-6 Testing Days
Transportation	-0-	-0-	4 Days $6,380,000	7 Days $12,760,000	10 Days $19,140,000

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TABLE 1

COMPARISON OF NEW YORK STATE AND NATIONAL AVERAGES
ON COLLEGE BOARD TESTS

(COLLEGE-BOUND SENIORS, 1972-1982)

SCHOLASTIC APTITUDE TESTS AND TESTS OF STANDARD WRITTEN ENGLISH

	SAT - Verbal			SAT - Math			TWSE		
	NYS	Nat	Diff	NYS	Nat	Diff	NYS	Nat	Diff
1972	460	453	+ 7	495	484	+11			
1973	454	445	+ 9	497	481	+16			
1974	452	444	+ 8	495	480	+15			
1975	441	434	+ 7	484	472	+12	43.2	43.2	0
1976	437	431	+ 6	484	472	+12	42.9	43.1	-.2
1977	434	429	+ 5	479	470	+ 9	42.6	42.9	-.3
1978	431	429	+ 2	471	468	+ 3	42.1	42.8	-.7
1979	426	427	- 1	469	467	+ 2	42.1	42.5	-.4
1980	424	424	0	465	466	- 1	41.5	42.4	-.9
1981	427	424	+ 3	471	466	+ 5	41.7	42.2	-.5
1982	429	426	+ 3	467	467	0	41.4	42.3	-.9

Source: Division of Educational Testing, New York State Education Department, Albany, New York.

TABLE 2

COMPARISON OF NEW YORK STATE AND NATIONAL AVERAGES
ON COLLEGE BOARD ACHIEVEMENT TESTS

(COLLEGE-BOUND SENIORS, 1981 and 1982)

Achievement Test	1981			1982		
	NYS	Nat	Diff	NYS	Nat	Diff
English Composition	517	512	+ 5	526	520	+ 6
Mathematics Level 1	572	539	+33	575	545	+30
Biology	590	546	+44	587	548	+39
Chemistry	602	571	+31	604	575	+29
American History	538	508	+30	549	511	+38
Spanish	547	529	+18	548	531	+17
Mathematics Level 2	675	654	+21	670	661	+ 9
French	559	546	+13	564	546	+18
Physics	613	595	+18	612	592	+20
Literature	522	517	+ 5	527	521	+ 6
European History	567	544	+23	572	544	+28
German	582	551	+31	582	563	+19
Hebrew	629	602	+27	646	622	+24
Latin	574	548	+26	576	554	+22
Russian	708	642	+66	736	652	+84
All Tests Combined	552	532	+20	556	537	+19

NOTE: Listed in order of numbers written in New York State in 1982.

Source: Division of Educational Testing, New York State Education Department.

TABLE 3

NUMBER OF STUDENTS TAKING
ADVANCED PLACEMENT HONORS COURSES
1981-82

	English	Math	Foreign Languages	Biological Sciences	Physical Sciences	Social Studies
Nationwide	147,238	135,895	60,136	87,217	86,711	91,355
New York State	16,339	16,994	8,494	12,017	11,064	14,314
NYS Percentage	11%	12%	13%	14%	13%	15%

Source: "College Bound High School Seniors," College Entrance Examination Board, 1982.

TABLE 4

NEW YORK STATE AWARDS IN THE
WESTINGHOUSE SCIENCE TALENT SEARCH

Year	Number of Winners from New York State	Percent of National Winners	Number of Honorable Mentions from New York State	Percent of National Honorable Mentions
1965	10	25.0	56	18.7
1966	9	22.5	57	19.0
1967	7	17.5	73	24.3
1968	6	15.0	71	23.7
1969	8	20.0	54	18.0
1970	14	35.0	56	18.7
1971	11	27.5	66	22.0
1972	11	27.5	60	20.0
1973	11	27.5	56	18.7
1974	9	22.5	61	20.3
1975	10	25.0	61	20.3
1976	13	32.5	74	24.7
1977	14	35.0	83	27.7
1978	14	35.0	89	29.7
1979	15	37.5	79	26.3
1980	14	35.0	95	31.8
1981	17	42.5	106	35.3
1982	16	40.0	119	39.7

Source: Favitta, J. "Westinghouse Science Talent Search, New York State Figures." Bureau of Science Education.

TABLE 5

HIGH SCHOOL DROPOUTS 16-24 YEARS OLD,
BY RACE AND AGE,
1968-1981

Race and Age	Percent of Population				
	1968	1970	1975	1980	1981
Total dropouts	13.1	12.2	11.5	12.0	11.8
16 - 17 years	7.8	8.0	8.6	8.8	7.7
18 - 21 years	17.1	16.4	16.3	15.8	15.6
22 - 24 years	22.3	18.7	14.5	15.2	15.1
White	11.9	10.8	10.5	11.3	11.3
16 - 17 years	7.2	7.3	8.4	9.2	7.7
18 - 21 years	15.6	14.3	14.7	14.7	14.9
22 - 24 years	20.1	16.3	12.6	14.0	14.0
Black	21.6	22.2	18.5	16.0	15.4
16 - 17 years	12.2	12.8	10.2	6.9	7.9
18 - 21 years	28.6	30.5	27.0	23.0	21.1
22 - 24 years	40.5	37.8	27.8	24.0	22.3

Source: Statistical Abstract of the United States, 1982-83, 103d edition
Washington, D.C.: Bureau of the Census.

TABLE 6

AVERAGE SCORES OF 14-YEAR-OLD STUDENTS
ON INTERNATIONAL ACHIEVEMENT TESTS,
SELECTED COUNTRIES

1980

Country	Math Percent Correct	Science Percent Correct	Reading Comprehension Percent Correct	Literature Percent Correct
United States	23.8	27.0	52.5	44.6
France	26.9	**	**	**
Germany (F.R.)	**	29.6	**	**
Italy	**	23.1	53.8	44.3
Japan	45.9	39.0	**	**
Netherlands	35.1	22.3	48.5	**
Sweden	23.1	27.1	49.2	43.0
United Kingdom	28.4	26.6	48.7	43.5

** Data not available

Source: Digest of Education Statistics, 1980. Washington, D.C.: National Center for Education Statistics.

TABLE 7

SCHOOL ENROLLMENT DATA IN
TWELVE MAJOR DEVELOPED COUNTRIES OF THE WORLD

Country	Percent of Population Aged 5-19 in School		Number of Teachers Per Thousand Pupils	
	Percent	Rank	Number	Rank
Australia	73%	4	44	3
Belgium	58	11	40	7
Canada	76	3	40	7
France	68	8	41	6
Italy	62	10	42	5
Japan	71	6	25	12
Netherlands	63	9	29	11
Soviet Union	58	11	37	9
Sweden	72	5	46	1
United Kingdom	83	2	45	2
United States	85	1	43	4
West Germany	69	7	35	10

Source: World Almanac 1982 (Ranks added)

TABLE 8

NEW YORK STATE PUBLIC SCHOOL ENROLLMENTS

1970 - 1983

Year	K-6		7-12		Total	
	Enrollment	Percent Change	Enrollment	Percent Change	Enrollment	Percent Change
1970-71	1,942,224	--	1,564,079	--	3,506,303	--
1971-72	1,922,567	-1.0%	1,600,467	+2.3%	3,523,034	+0.5%
1972-73	1,878,260	-2.3	1,616,545	+1.0	3,494,805	-0.8
1973-74	1,820,837	-3.1	1,632,495	+1.0	3,453,332	-1.2
1974-75	1,780,520	-2.2	1,644,353	+0.7	3,424,873	-0.8
1975-76	1,748,419	-1.8	1,657,596	+0.8	3,406,015	-0.6
1976-77	1,677,531	-4.1	1,651,020	-0.4	3,328,551	-2.3
1977-78	1,591,179	-5.1	1,620,670	-1.8	3,211,849	-3.5
1978-79	1,510,467	-5.1	1,573,333	-2.9	3,083,800	-4.0
1979-80	1,440,899	-4.6	1,517,826	-3.5	2,958,725	-4.1
1980-81	1,393,745	-3.3	1,466,626	-3.4	2,860,371	-3.3
1981-82	1,347,682	-3.3	1,422,958	-3.0	2,770,640	-3.1
1982-83*	1,308,600	-2.9	1,384,500	-2.7	2,693,100	-2.8

* Estimate

Source: New York State Education Department

TABLE 9

PERCENTAGE OF STATE AID TO PUBLIC EDUCATION
IN TOTAL NEW YORK STATE BUDGET,
1971 - 1983

State Fiscal Year	Approximate Total State Budget (in billions)	Approximate State Aid to Public Schools (in billions)	Percent of Total Budget
1971-72	$ 7.4	$2.4	32.0%
1972-73	7.8	2.4	31.3
1973-74	8.5	2.6	30.0
1974-75	9.6	2.9	30.5
1975-76	10.6	3.1	29.0
1976-77	11.0	3.1	28.2
1977-78	11.2	3.1	28.1
1978-79	11.9	3.3	27.9
1979-80	13.2	3.5	26.9
1980-81	15.2	4.0	26.1
1981-82	16.1	4.1	25.1
1982-83*	17.6	4.5	25.8

* Estimated

Source: State of New York, Executive Budgets as summarized in "Facts and Figures for New York State Public Schools, 1983." Albany, NY: New York State School Boards Association.

TABLE 10

EXPENDITURES PER CAPITA
FOR
STATE AND LOCAL GOVERNMENTS

(New York State versus the National Average),

1980-81

Government Function	U.S. Average	New York State	NYS as Percent of U.S. Average
K-12 Education	$443	$534	121%
Public Welfare	231	394	171
Health and Hospitals	159	227	143
Highways	153	148	97
Police Protection	66	93	141
Fire Protection	28	39	139
Corrections	33	44	133
Sewerage	49	56	114
Housing and Urban Renewal	31	77	248
National Resources, Parks	58	42	72
Governmental Administration	88	106	120

Source: "Facts and Figures for New York State Public Schools, 1983." Albany, NY: New York State School Boards Association (U.S. Department of Commerce, Bureau of the Census, 1982).

TABLE 11

RECENT PER PUPIL EDUCATION COSTS IN NEW YORK STATE

	1980-81	1981-82	Percent Change
Total Expenditures Per Pupil	$3,480	$3,806	9.3%
Operating Expenditures Per Pupil	2,680	3,029	13.0
Total Debt Service Per Pupil	213	215	0.9
Total State Aid Per Pupil	1,387	1,537	10.8

Source: New York State Education Department, Analysis of School Finance as summarized in "Facts and Figures for New York State Public Schools, 1983." Albany, NY: New York State School Boards Association.

TABLE 12

PERCENT CHANGE IN CURRENT EXPENDITURES PER PUPIL *

(Selected States and U.S. Average)

Area	1976-77	1982-83	Percent Increase
New York	$2,398	$3,741	56.0%
California	1,570	2,337	48.9
Illinois	1,635	2,958	80.9
Massachusetts	1,966	3,645	85.4
Michigan	1,754	2,282	87.1
New Jersey	2,057	3,837	86.5
Pennsylvania	1,771	2,865	61.8
United States	$1,544	$2,690	74.2%

* Based on Average Daily Attendance

Source: "Facts and Figures for New York State Public Schools, 1983." Albany, NY: New York State School Boards Association.

TABLE 13

NEW YORK STATE PUBLIC SCHOOL TEACHERS

	1976-77	1981-82
Median Age	37	39
Median Salary	$17,150	$23,437
Median Number of Years		
Total Education Experience	11	14
Local District Experience	9	13
Percent with:		
Master's Degree	58%	65%
Permanent Certification	85%	87%
Percent:		
Female	59%	61%
Male	41%	39%
Number of Teachers	173,975	168,516

Source: New York State Education Department, Bureau of Basic Education Data System (BEDS).

TABLE 14

SALARIES OF CLASSROOM TEACHERS IN NEW YORK STATE
COMPARED TO OTHER PROFESSIONAL SALARIES, 1982

Professional Category	U.S. Average Salaries 1982	Percent Above New York Teacher's Salary
Teacher (New York State)	$23,437*	-
Accountant	20,754	-11%
Attorney	43,246	85
Auditor	24,754	6
Buyer	24,803	6
Chemist	32,843	40
Engineer	33,301	42
Job Analyst	24,834	6

* Median

Sources: National Survey of Professional, Administrative, Technical, and Clerical Pay. Washington, D.C.: U.S. Department of Labor, March, 1982.

New York State Education Department

TABLE 15

BEGINNING SALARIES OF COLLEGE GRADUATES

United States

1983

Field	Average Starting Salary
Bachelor's Degree	
Teachers (New York State)	$14,000*
Accounting	19,476
Business Administration	18,564
Chemistry	22,344
Computer Science	23,208
Economics-Finance	19,740
Engineering	25,800
Liberal Arts	18,264
Math-Statistics	21,696
Other Fields	21,156
Sales-Marketing	18,648
Master's Degree	
Teachers (New York State)	$15,500*
Accounting	24,168
Engineering	29,100
MBA with Nontechnical BA	26,676
MBA with Technical BS	25,764
Other Nontechnical Fields	25,728
Other Tehcnical Fields	26,484

* Estimated median

Source: Lindquist, Victor R. The Northwestern Endicott Report, 1983: Thirty-Seventh Annual Survey of Well-Known Business and Industrial Firms Concerning Employment Trends for College Graduates.

TABLE 16

PUBLIC ELEMENTARY AND SECONDARY SCHOOLS: NUMBER AND AVERAGE SALARY OF CLASSROOM TEACHERS, 1960-1982, and By States, 1982

(Estimates by school year ending in June.

Schools classified by type of organization rather than by grade-group; elementary includes kindergarten)

YEAR AND STATE	TEACHERS (1,000)			AVG. SALARY ($1,000)		
	Total	Elementary	Secondary	All Teachers	Elementary	Secondary
1960	1,355	834	521	5.0	4.8	5.3
1965	1,648	940	708	6.2	6.0	6.5
1970	2,008	1,109	899	8.6	8.4	8.9
1974	2,138	1,152	986	10.8	10.5	11.1
1975	2,171	1,169	1,001	11.7	11.3	12.0
1976	2,191	1,170	1,021	12.6	12.3	12.9
1977	2,186	1,176	1,011	13.4	13.0	13.8
1978	2,196	1,175	1,021	14.2	13.9	14.6
1979	2,205	1,189	1,016	15.0	14.7	15.5
1980	2,204	1,201	1,003	16.0	15.6	16.4
1981	2,202	1,198	1,004	17.6	17.2	18.1
1982, U.S.	2,178	1,187	991	19.0	18.5	19.5
Ala.	39.7	20.3	19.4	15.4	15.0	16.0
Alaska	5.4	2.9	2.4	31.9	31.8	32.1
Ariz.	27.0	18.6	8.4	18.0	17.8	18.4
Ark.	24.1	11.8	12.3	14.0	13.6	14.4
Calif.	174.4	104.0	70.4	22.4	22.1	22.8
Colo.	29.9	14.8	15.1	19.6	19.1	20.1
Conn.	32.6	19.7	12.9	18.3	18.1	18.4
Del.	5.6	2.5	3.0	19.2	18.7	19.7
D.C.	5.1	3.0	2.1	24.3	24.3	24.2
Fla.	79.6	43.1	36.6	16.9	17.1	16.6
Ga.	59.9	35.3	24.6	16.4	16.1	16.8
Hawaii	8.0	4.8	3.2	23.3	23.8	22.5
Idaho	10.1	5.4	4.7	16.3	16.0	16.8
Ill.	108.5	71.0	37.3	21.0	20.1	22.6
Ind.	52.6	26.3	26.2	19.0	18.5	19.4
Iowa	31.1	14.7	16.4	18.0	17.3	18.6
Kans.	26.3	14.4	11.9	16.5	16.5	16.6
Ky.	33.2	21.9	11.3	17.2	16.7	18.1
La	42.9	24.0	18.9	17.3	17.0	17.6
Maine	12.2	7.6	4.6	14.9	14.4	15.6
Md.	39.6	18.7	21.0	20.9	20.2	21.4
Mass.	58.0	24.3	33.7	19.9	19.6	20.0
Mich.	78.2	40.6	37.6	22.3	22.1	22.6
Minn.	44.0	21.1	22.9	12.9	19.1	20.6
Miss.	25.4	14.0	11.4	14.1	13.9	14.4
Mo.	47.8	23.9	23.9	16.5	16.1	16.9
Mont.	9.1	5.1	4.0	17.6	17.0	18.4
Nebr.	16.8	8.5	8.3	15.5	14.4	16.3
Nev.	7.2	3.6	3.5	18.2	18.1	18.4
N.H.	9.9	5.2	4.7	14.7	14.5	14.9
N.J.	75.3	44.4	30.9	19.7	19.3	20.2
N.Mex.	14.1	6.7	7.4	18.9	18.6	19.2
N.Y.	163.7	71.2	92.5	22.8	22.6	23.0
N.C.	55.2	33.6	21.6	16.4	16.3	16.4
N.Dak.	7.2	4.2	3.0	14.8	15.0	14.6
Ohio	99.4	54.9	44.6	18.1	17.6	18.7
Okla.	34.8	18.1	16.6	16.8	16.4	17.2
Oreg.	26.3	16.2	10.1	20.0	19.6	20.8
Pa.	105.8	48.5	57.3	19.3	18.8	19.7
R.I.	9.1	4.6	4.5	21.5	21.6	21.4
S.C.	31.9	19.8	12.1	15.6	15.2	16.3
S.Dak.	8.0	5.2	2.8	14.5	14.3	14.8
Tenn.	40.6	25.0	15.6	16.2	16.1	16.3
Tex.	166.0	92.8	73.2	17.5	17.0	18.1
Utah	14.7	8.4	6.3	17.9	17.3	18.7
Vt.	6.8	3.5	3.3	13.6	13.1	14.0
Va.	58.0	34.2	23.7	17.1	16.5	17.9
Wash.	35.5	20.0	15.5	22.3	21.8	23.0
W.Va.	22.2	12.5	9.7	17.2	17.0	17.4
Wis.	52.9	28.5	24.3	19.3	18.9	19.9
Wyo.	7.1	3.9	3.2	21.2	20.4	22.0

Source: National Education Association. Estimates of School Statistics, 1981-82. Washington, DC: Author, 1982.

TABLE 17

PUBLIC ELEMENTARY AND SECONDARY SCHOOLS:
CLASSROOM TEACHERS, BY EXPERIENCE AND DEGREES HELD,
1966 to 1981

(As of spring. Based on sample and subject to sampling variability)

EXPERIENCE AND DEGREE	1966		1971		1976		1981			
	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary	Men	Women
Percent with teaching experience of:										
1-2 years	16.2	21.0	15.2	18.6	10.1	12.6	6.0	6.1	3.6	6.2
3-4 years	12.2	16.7	16.4	14.7	15.9	15.9	8.7	9.3	5.8	9.5
5-9 years	19.8	23.9	21.4	27.7	28.6	29.0	28.2	24.0	22.5	27.9
10-14 years	14.1	14.3	14.3	17.2	15.6	19.0	20.5	24.7	23.9	22.4
15-19 years	11.0	8.5	10.4	8.9	12.1	12.9	14.5	16.4	16.5	15.0
20 years or more	26.7	15.7	22.5	13.7	17.5	10.6	22.1	21.4	27.6	19.0
Median (years)	10	7	8	7	8	8	11	12	13	11
Percent highest degree held:										
No degree	12.9	.6	1.0	.4	.5	.6	.2	.3	.2	.2
2-year degree			3.6	.7	.1	.4	.2	.1	.2	.1
Bachelor's degree	71.4	67.7	74.5	64.2	69.8	53.6	54.8	46.0	37.4	50.3
Master's degree	14.9	29.6	20.3	32.5	27.1	41.2	40.1	47.7	54.8	38.9
Professional degree, 6 years	.8	1.9	.6	1.4	2.2	3.3	4.6	5.7	6.7	4.3
Doctor's degree	-	.3	-	.8	.1	.7	.2	.3	.7	.1

- Represents zero or rounds to zero

Source: National Education Association. Status of the American Public School Teacher, 1965-66, 1970-71, 1975-76, and 1980--81. Washington, D.C.: Author, 1967, 1972, 1977, 1981.

TABLE 18

ELEMENTARY AND SECONDARY SCHOOLS: ENROLLMENT AND TEACHERS, BY TYPE OF CONTROL, 1960 to 1980, and Projections, 1985 and 1990

(In thousands, except percent and ratio. As of fall of year. Schools are classified by type of organization, rather than by grade group; elementary includes kindergarten; secondary includes junior high schools. Minus sign (-) denotes decrease)

ITEM	1960	1965	1970	1975	1978	1979	1980 prel	1985 proj	1990 proj
PUPILS ENROLLED									
Total	42,181	48,473	51,272	49,791	47,636	46,679	46,095	44,186	46,667
Annual percent change[1]	3.6	2.8	1.1	-.6	-1.6	-2.0	-1.3	-.9	1.1
Elementary	29,150	31,670	31,883	29,340	28,749	28,551	27,987	27,338	31,022
Secondary	13,031	16,804	19,719	20,451	18,887	18,128	18,108	16,828	15,645
Public	36,281	42,173	45,909	44,791	42,550	41,579	40,995	39,166	41,267
Elementary	24,350	26,670	27,501	25,640[2]	25,017	24,851	24,287	23,738	27,022
Secondary	11,931	15,504	18,408	19,151	17,534	16,728	16,708	15,428	14,245
Private[2]	5,900	6,300	5,363	[3]5,000	[3]5,085	5,100	[3]5,100	5,000	5,400
Elementary	4,800	4,900	4,052	3,700	3,732	3,700	3,700	3,600	4,000
Secondary	1,100	1,400	1,311	1,300	1,353	1,400	1,400	1,400	1,400
CLASSROOM TEACHERS									
Total	1,600	1,993	2,288	2,451	2,478	2,456	2,439	2,408	2,642
Annual percent change[1]	4.5	3.9	3.4	1.4	.4	-.9	-.7	-.3	1.9
Elementary	991	1,112	1,281	1,352	1,375	1,374	1,362	1,385	1,654
Secondary	609	822	1,007	1,099	1,103	1,082	1,077	1,023	988
Public	1,408	1,710	2,066	2,196	2,206	2,181	2,163	2,128	2,333
Elementary	858	965	1,128	1,180	1,190	1,188	1,175	1,199	1,440
Secondary	550	746	927	1,016	1,016	993	988	929	893
Private	192	223	233	[3]255	273	[3]276	276	280	309
Elementary	133	147	153	[3]172	185	[3]186	187	186	214
Secondary	59	76	80	[3]83	87	[3]89	89	94	95
PUPIL-TEACHER RATIO									
Public: Elementary	28.4	27.6	24.4	21.7	21.0	20.9	20.7	19.8	18.8
Secondary	21.7	20.3	19.9	18.8	17.3	16.8	16.9	16.6	16.0
Private: Elementary	36.1	33.3	26.5	21.6	20.2	19.9	19.8	19.4	18.7
Secondary	18.6	18.4	16.4	15.7	15.6	15.7	15.7	14.9	14.7

[1]Average from prior year shown; from 1960, from 1955. [2]Data for 1970 and later years have been revised since originally published. [3]Estimated

Source: U.S. National Center for Education Statistics. Projections of Education Statistics, biennial; and unpublished data.

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TABLE 19

PUBLIC SCHOOL FINANCES, 1975 to 1981,
AND BY SELECTED STATES, 1981

(In millions of dollars, except as noted. For school years ending in June)

YEAR AND STATE	RECEIPTS						EXPENDITURES					
		Revenue receipts							Current expenditures			
			Source									
	Total	Total	Federal	State	Local	Non-revenue receipts	Total[1]	Per capita[2] (dol.)	Elem. and secondary day schools	Average per pupil in ADA[3] Amount (dol.)	Rank	Capital outlay
1975	67,900	64,445	5,812	27,211	31,423	3,454	64,844	304	56,659	1,364	(X)	5,746
1976	[4]74,594	71,206	6,318	31,776	33,112	[4]3,388	70,601	328	62,054	1,504	(X)	6,146
1977	79,249	75,323	6,629	32,689	36,004	3,926	75,014	345	66,864	1,638	(X)	5,344
1978	84,969	81,440	7,699	35,006	38,736	3,529	80,844	368	73,058	1,823	(X)	5,245
1979	91,890	88,057	8,643	40,246	39,168	3,833	86,712	390	78,951	2,021	(X)	5,448
1980	100,554	96,881	9,504	45,349	42,029	3,674	95,962	427	86,984	2,275	(X)	6,506
1981, total[4]	103,666	99,841	8,410	46,774	44,657	3,826	98,499	434	88,607	2,350	(X)	6,721
Calif.	11,371	11,271	1,079	7,384	2,808	100	11,057	466	10,494	2,594	16	422
Ill.	5,739	5,133	456	1,892	2,785	606	4,619	404	4,237	2,441	22	201
N.Y.	9,982	9,720	465	3,955	5,300	262	9,251	526	8,488	3,358	3	350
Ohio	4,553	4,217	347	1,711	2,160	336	4,096	379	3,867	2,143	27	93
Pa.	5,425	5,226	416	2,293	2,517	200	5,232	440	4,864	2,798	7	200

X Not Applicable.

[1]Includes interest on school debt and expenditures for summer schools, adult education, community services, and community colleges and technical institutions under the jurisdiction of local boards of education, not shown separately

[2]Based on Bureau of the Census estimated resident population, as of July 1, 1980

[3]Average daily attendance

[4]Estimated

Source: U.S. National Center for Education Statistics. Digest of Education Statistics, annual, and unpublished data

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TABLE 20

PUBLIC AND PRIVATE HIGH SCHOOL GRADUATES, BY STATE,
1975 and 1980
(In thousands. Excludes graduates of subcollegiate departments of higher education, Federal schools for Indians, Federal schools on Federal installations, and residential schools for exceptional children.)

STATE	PUBLIC		PRIVATE		STATE	PUBLIC		PRIVATE	
	1975	1980	1975	1980[1]		1975	1980	1975	1980[1]
U.S.	2,823.0	2,766.6	310.0	299.4	Missouri	62.4	62.3	9.0	7.6
					Montana	12.3	12.1	1.2	.6
Alabama	46.6	45.2	3.4	3.9	Nebraska	22.2	22.4	2.7	3.0
Alaska	4.2	5.2	.1	.2	Nevada	7.2	8.5	.3	.3
Arizona	25.7	28.9	1.8	1.8	New Hampshire	11.1	[2]11.7	1.9	2.2
Arkansas	26.8	29.1	.8	1.1					
California	[3]273.4	258.0	21.9	24.9	New Jersey	96.0	[3]94.6	16.9	14.5
Colorado	36.0	36.8	1.9	1.9	New Mexico	18.4	18.4	.8	.9
					New York	[3]211.3	204.1	42.8	32.5
Connecticut	4..8	37.7	7.3	8.7	North Carolina	70.1	70.9	2.1	2.8
Delaware	8.2	7.6	1.3	1.5	North Dakota	10.7	9.9	.7	.7
District of Columbia	5.4	5.0	1.4	1.6					
Florida	86.5	87.3	6.4	10.4	Ohio	158.2	144.2	18.7	15.8
Georgia	59.8	61.6	2.4	5.4	Oklahoma	37.8	39.3	.9	1.0
Hawaii	11.3	11.5	2.3	2.6	Oregon	30.7	29.9	1.5	1.8
					Pennsylvania	163.1	146.5	30.8	26.8
Idaho	12.6	13.2	.2	.3	Rhode Island	11.0	10.9	2.0	2.1
Illinois	[3]141.3	136.6	25.5	20.8					
Indiana	74.0	73.1	5.4	5.4	South Carolina	[2]38.3	[4]38.7	2.4	2.7
Iowa	43.0	43.4	4.5	3.8	South Dakota	11.7	10.7	.7	.6
Kansas	32.5	30.9	2.0	1.8	Tennessee	49.4	49.8	3.0	5.4
Kentucky	42.4	41.2	4.0	4.5	Texas	159.5	171.4	4.6	7.3
					Utah	19.7	20.0	.3	.5
Louisiana	47.7	46.3	9.2	9.9					
Maine	14.8	15.4	1.8	1.9	Vermont	6.5	[3]6.6	1.4	.9
Maryland	55.4	54.3	6.9	7.1	Virginia	65.6	66.6	4.4	4.5
Massachusetts	[3]79.0	73.8	15.0	12.9	Washington	51.1	50.4	2.7	3.1
Michigan	135.5	124.3	15.9	13.5	West Virginia	24.6	23.4	.8	.9
Minnesota	66.5	[2]64.9	4.8	4.6	Wisconsin	71.0	69.3	7.5	7.0
Mississippi	27.2	27.6	3.6	3.7	Wyoming	5.6	6.1	.1	.2

[1]Preliminary [2]Includes graduates of regular day school and other programs [3]Estimated [4]Data reflect the number of diplomas ordered from the Office of Accreditation and Administration from July 1, 1979 through June 30, 1980
Source: U.S. National Center for Education Statistics. Digest of Education Statistics, annual.

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TABLE 21

SCHOLASTIC APTITUDE TEST (SAT) SCORES AND CHARACTERISTICS OF COLLEGE-BOUND SENIORS, 1967 to 1981

TYPE OF TEST AND CHARACTERISTIC	Unit	1967	1970	1973	1974	1975	1976	1977	1978	1979	1980	1981
TEST SCORES[1]												
Verbal, total[2]	Point	466	460	445	444	434	431	429	429	427	424	424
Male	Point	463	459	446	447	437	433	431	433	431	428	430
Female	Point	468	461	443	442	431	430	427	425	423	420	418
Math, total[2]	Point	492	488	481	480	472	472	470	468	467	466	466
Male	Point	514	509	502	501	495	497	497	494	493	491	492
Female	Point	467	465	460	459	449	446	445	444	443	443	443
PARTICIPANTS												
Sex:												
Male	Percent	(NA)	(NA)	51.0	50.1	49.9	49.5	48.9	48.4	48.3	48.2	48.0
Female	Percent	(NA)	(NA)	49.0	49.9	50.1	50.5	51.1	51.6	51.7	51.8	52.0
Obtaining scores[1] of--												
600 or above:												
Verbal	Percent	(NA)	(NA)	9.7	10.0	7.9	8.0	8.0	7.9	7.7	7.2	7.0
Math	Percent	(NA)	(NA)	16.7	17.2	15.6	16.3	16.1	15.8	15.0	15.1	14.4
Below 400:												
Verbal	Percent	(NA)	(NA)	34.8	35.4	37.8	39.7	39.1	39.8	40.7	41.8	41.6
Math	Percent	(NA)	(NA)	24.3	25.5	28.5	29.1	29.7	29.8	29.9	30.2	29.5
Selected intended area of study:												
Business and commerce	Percent	(NA)	(NA)	10	10	11.5	12.6	14.3	16.3	17.8	18.6	18.5
Health and medical	Percent	(NA)	(NA)	(NA)	(NA)	(NA)	17.9	17.6	16.4	15.5	14.7	14.4
Engineering	Percent	(NA)	(NA)	6	5	6.7	8.4	8.8	9.4	10.1	11.1	11.8
Social science	Percent	(NA)	(NA)	(NA)	(NA)	7.7	6.8	8.2	9.0	8.2	7.8	7.4
Education	Percent	(NA)	(NA)	10	8	9.1	8.7	8.1	7.2	6.5	6.1	5.7
SAT average[1] by high school rank:												
Top tenth	Point	(NA)	(NA)	(NA)	(NA)	(NA)	552	546	543	541	539	539
Second tenth	Point	(NA)	(NA)	(NA)	(NA)	(NA)	478	476	472	471	470	472
Second fifth	Point	(NA)	(NA)	(NA)	(NA)	(NA)	434	434	433	432	431	433
Third fifth	Point	(NA)	(NA)	(NA)	(NA)	(NA)	386	387	386	386	386	387

NA Not available [1]Minimum score, 200; maximum score, 800 [2]1967 and 1970 are estimates based on total number of persons taking SAT

Source: College Entrance Examination Board, New York, NY, National Report on College-Bound Seniors, annual. (Copyright)

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